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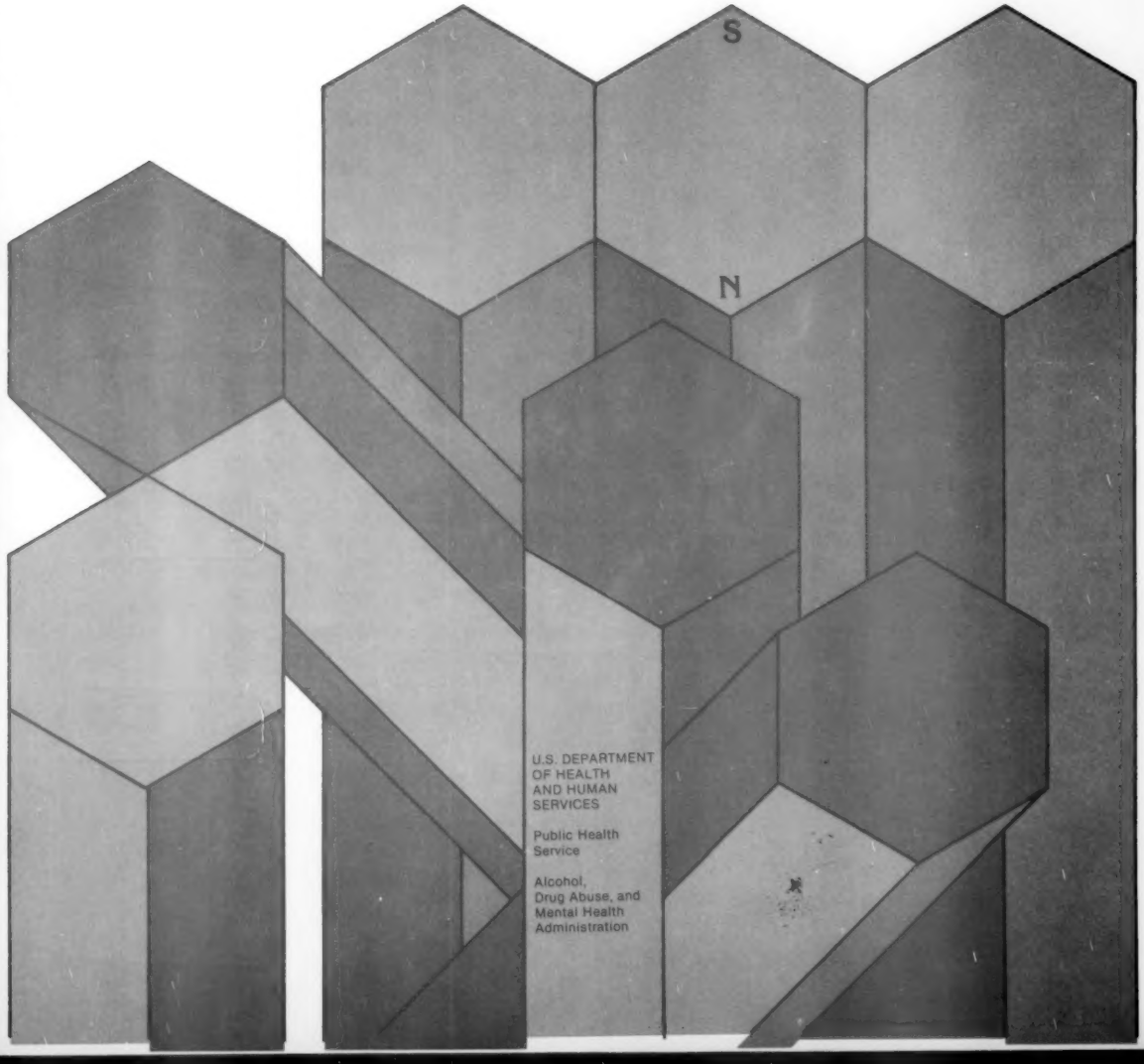

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Carrie Lee Rothgeb, *Editor*
Bette L. Shannon, *Managing Editor*

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ABSTRACTS

PRECLINICAL PSYCHOPHARMACOLOGY

01 CHEMICAL SYNTHESIS, ISOLATION AND CHARACTERIZATION

001001 Axelrod, Julius; Hirata, Fusao. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Phospholipid methylation and transmembrane signalling. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Methylation of phospholipids in membranes has been shown to serve an important role in the transmission of biological signals through membranes, and studies with erythrocyte membranes have shown that phospholipids are methylated by two enzymes. These enzymes, as well as their substrates and products, are asymmetrically distributed in membranes. As phosphatidylethanolamine is successively methylated it is rapidly translocated from the cytoplasmic side to the outside of the membrane where phosphatidyl choline is highly localized. In the process of translocation of methylated phospholipids, the viscosity of erythrocyte membrane is reduced. Findings are presented which indicate that many rceptors form a signal cluster in membranes where phospholipid methyltransferase, Ca2 channels, phospholipase A2, and perhaps other macromolecules, are closely coupled. Binding of receptor with ligands sets off a cascade of sequential events as follows: phospholipid methylation, increased fluidity, Ca2 influx, arachidonic acid and lysophosphatidyl choline release which then evokes specific cellular responses. (Author abstract modified)

001002 Bareis, Donna Lynn; Hirata, F.; Manganiello, V.; Axelrod, J. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Bradykinin receptor stimulation of cAMP involves phospholipid methylation, Ca flux, phospholipase A2 activation and prostaglandin formation. (Unpublished paper).** Bethesda, MD. NIMH, 1980. 1 p.

Data obtained when human fibroblasts were stimulated with bradykinin and the changes in several membrane-associated processes were observed, showed that bradykinin stimulates cAMP production in fibroblasts through the receptor-mediated production of E-series prostaglandins (PGs). Methylation of phospholipids increased 75 to 100% within 15 seconds followed by rapid metabolism of the methylated lipids. 45Ca2 influx peaked at 30 seconds. Release of arachidonic acid from phospholipids and production of the metabolites PGE2 and PGF2alpha were increased twofold to threefold in 3 to 4 minutes. The cAMP formation was stimulated by bradykinin more than 1000% in 4 minutes. These processes responded to bradykinin over the same dose range. Indomethacin inhibited PG formation and cAMP production but had no effect on Ca flux or phospholipid methylation. The phospholipase A2 inhibitor mepacrine blocked arachidonic acid release, PG production, and cAMP formation. The ionophore A23187 stimulated Ca flux, arachidonic acid release and metabolism, and cAMP production. The methyltransferase inhibitor 3-deazaadenosine prevented increases in phospholipid methylation, Ca influx, arachidonic acid release,and PG production, but did not affect stimulation of cAMP formation. These results suggest a pathway for bradykinin receptor activation sequentially involving phospholipid methylation, CA influx, phospholipase A2 activation leading to arachidonic acid release and metabolism, and cAMP formation. (Author abstract)

001003 Beinfeld, M. C.; Meyer, D. K.; Brownstein, Michael J. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **The identity and hypothalamic origin of cholecystokinin in rat brain and posterior pituitary and its possible role in regulation of neurosecretion. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

The distribution of cholecystokinin (CCK) was measured in rat brain utilizing radioimmunoassay (RIA) and was found to be in agreement with previous studies of CCK distribution by the technique of immunohistochemistry. CCK was present in high concentrations in the cerebral cortex and striatum and widely distributed in the central nervous system. The CCK concentration in the posterior pituitary was similar to cerebral cortex. No CCK was detected in the intermediate and anterior lobes of the pituitary. The CCK-like immunoreactivity in rat brain was found to be sulfated octapeptide (CCK8) on the basis of Sephadex G-50 and HPLC chromatography. The predominant CCK-like material in posterior pituitary was also CCK8. In contrast to previous reports on porcine pituitary, no gastrin was found in rat pituitary. Pituitary stalk sectioning resulted in complete loss of CCK. Paraventricular (PVN) lesioning resulted in about 60% loss of CCK. These results indicate that all of the pituitary CCK has an extrapituitary source and that about 60% of it is made in PVN. In lactating rats pituitary CCK was reduced to 17% of control and in salt-treated animals CCK was reduced to 20% of controls. Since CCK was reduced under conditions where release of vasopressin and oxytocin are altered, it is possible that CCK may be involved in the regulation of vasopressin or oxytocin neurosecretion. (Author abstract modified)

001004 Beinfeld, Margery C. Laboratory of Clinical Science, NIMH, Bldg. 10, 3N311, Bethesda, MD 20205 **An HPLC and RIA analysis of the cholecystokinin peptides in rat brain. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 7 p.

Methanol and boiling water extracts of rat brain were chromatographed on two high pressure liquid chromatography columns and the major cholecystokinin (CCK) peptides that eluted were detected by radioimmunoassay. The major CCK-like substance in both extracts co-chromatographed with CCK octapeptide sulfate on both columns, in agreement with previous reports of gel filtration chromatography of extracts of rat, porcine, human, and guinea pig brain. Minor immunoreactive components were detected in both extracts which chromatographed with CCK8 desulfate, CCK4, or CCK5, and variable amounts of partially or completely oxidized CCK8 sulfate and desulfate. Little or no immunoreactivity comigrated with sulfated or desulfated gastrin 17. In boiling water extracts, two additional peaks of immunoreactivity were detected, one which co-elutes with CCK33 and one which precedes CCK33 and has an apparent molecular weight of 40,000 to 50,000 daltons. This pro=CCK is not dissociated by treatment with sodium dodecyl sulfate and is considerably less hydrophobic than CCK8 or CCK4. It may be the same as the putative CCK precursor reported by Rehfeld to incorporate 35S methionine in rat cortex which yields CCK8 upon trypsinization. 12 references. (Author abstract)

001005 Beinfeld, Margery C.; Jensen, Robert T.; Brownstein, Michael J. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **HPLC separation of cholecystokinin peptides--two systems. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 5 p.

Two HPLC systems are described which separate cholecystokinin (CCK) peptides from each other and from gastrin. One system utilizes a Supelcosil LC-18 reverse phase column with an acetonitrile-triethylamine phosphate buffer. The other system utilizes a Varian 2000 SW micropack molecular sieve column run in 0.1M phosphate buffer. These HPLC systems offer improved resolution over conventional gel filtration of CCK and

should be useful, when coupled with radioimmunoassay, for determining the molecular forms of CCK present in biological samples. 1 references. (Author abstract)

001006 Bodner, Anne J.; Cantoni, Giulio L.; Chiang, Peter K. Biotech Research Laboratories, Rockville, MD 20850 **Anti-viral activity of 3-deazaadenosine and 5'-deoxy-5'-isobutylthio-3-deazaadenosine (3-deaza-SIBA). (Unpublished paper).** Bethesda, MD, NIMH, 1980. 10 p.

Earlier reports on the action of 3-deazaadenosine (3-deaza-Ado) and 5'-deoxy-5'-isobutylthio-3-deazaadenosine (3-deaza-SIBA) are extended. Both 3-deaza-Ado and 3-deaza-SIBA inhibit replication of both herpes simplex type-1 virus and the RNA type-C virus, HL-23. Oncogenic transformation caused by SV40 and HL-23 are also blocked by either compound. Both compounds exhibit relatively low cytotoxicity at the antiviral concentrations. 14 references. (Author abstract modified)

001007 Boyan-Salyers, Barbara D.; Clement-Cormier, Yvonne. Dental Science Institute, University of Texas Dental Branch, Houston, TX 77025 **Identification and partial purification of a hydrophobic protein component associated with (3H)spiroperidol binding activity. (Unpublished paper).** Research Report, NIMH Grant RO3-MH-32431, 1979. 15 p.

An isolation procedure utilizing proteolipid extraction techniques was applied to calf striatal microsomes and an extract (F3), which binds (3H)spiroperidol and exhibits stereoselectivity for () and (-) butaclamol, was isolated from the calf striatal microsomal fraction P3. It was found that specific binding activity in the chloroform methanol extract of the F3 is enhanced over that of the crude homogenate. The highest specific binding of the chloroform methanol extract is associated with the crude phospholipid component which is enriched in hydrophobic proteins and acidic phospholipids. Subfractionation of the crude phospholipid extract by gel filtration yields multiple peaks of (3H)spiroperidol binding activity, however, four major zones of specific binding activity were detected. These results, which demonstrate a close association of phospholipids with a dopamine binding site, suggest a functional role for proteolipid in receptor recognition and regulaton. 19 references. (Author abstract modified)

001008 Brownstein, Michael. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Peptides in neurobiology: an overview. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

An overview of peptides in neurobiology is presented which shows that between 20 and 25 biologically-active peptides have been found in the brain. Some of these are also present in the peripheral nervous system, the pituitary, the gastrointestinal tract, or the skin of certain species. The peptides have three related roles: neurohormones, neurotransmitters, and paracrine mediators. In order to be called a neurohormone, neurotransmitter, or paracrine mediator, a peptide must meet several criteria: 1) it must be present in neurons (or neuroendocrine cells); 2) it must be released from the cells that contain it; 3) it must be synthesized by these same cells; 4) it must be biologically active; 5) there must be a mechanism for terminating its actions; and 6) drugs which alter the action of the endogenous peptide must also affect exogenously applied peptides in the same way. Neuropeptides satisfy most of these criteria. The cell biology of the peptidergic neuron and the contribution of the cell are discussed concerning the role of peptides in the nervous system's functioning. (Author abstract modified)

001009 Caron, Marc G.; Srinivasan, Yogambal; Lefkowitz, Robert J. Dept. of Medicine and Biochemistry, Howard Hughes Medical Institute Laboratory, Duke University Medical Center, Durham, NC 27710 **Affinity chromatography of the beta-adrenergic receptor and characterization of antibodies raised against purified receptor preparations.** Advances in Biochemical Psychopharmacology. 21:151-158, 1980.

Studies of affinity chromatography of the beta-adrenergic receptor and characterization of antibodies raised against purified receptor preparations are described. Data are reviewed which suggest that both adsorption and elution of the receptor to and from the immobilized alprenolol gel (frog erythrocyte preparation) display properties of beta-adrenergic interactions. It is noted that chromatography of solubilized preparations of frog erythrocyte membranes on the alprenolol affinity support gave an extensive purification of the receptor binding activity. To further characterize the frog erythrocyte beta-adrenergic receptor, antibodies against the partially purified receptors were raised. Although at first inspection the specificity of the immune sera binding sites appear identical to that of the receptors, closer examination reveals some differences between these two types of binding sites. 17 references.

001010 Chiang, Peter K.; Guranowski, Andrzej; Segall, Jeffrey E. Laboratory of General and Comparative Biochemistry, NIMH, Bldg. 36, 3A19, Bethesda, MD 20205 **Irreversible inhibition of S-adenosylhomocysteine hydrolase by nucleoside analogs. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 33 p.

Data are presented to show that a large number of nucleoside analogs inactivate S-adenosylhomocysteine (AdoHcy) hydrolase in a time-dependent irreversible manner. There are two classes of these irreversible inhibitors: 1) analogs that inactivate the enzyme in a pseudo first order process and are devoid of any side chain at the 5'-OH group; and 2) analogs that inactivate the enzyme not in a pseudo first order process, and generally have a side chain at the 5' position. Among the more potent irreversible inhibitors are 2-chloroadenosine, Ara-A, and aristeromycin. It is concluded that both Ara-A and adenosine exert their irreversible inactivation by a suicide mechanism, whereas nucleosides, such as 5'-iodo-5'i-deoxyadenosine and 3'-deoxyadenosine, are strictly irreversible inhibitors per se. Release of adenine base from adenosine or Ara-A in the presence of AdoHcy hydrolase was observed, thus supporting the proposed catalytic mechanism of AdoHcy hydrolase, that entails the transient formation of 3'-ketoadenosine during enzymatic catalysis of either the formation or hydrolysis of AdoHcy. Although S-adenosylhomocysteine hydrolase purified from either beef liver or lupin seeds can bind cyclic AMP, no kinetic effects were observed due to such binding. 30 references. (Author abstract)

001011 Clement-Cormier, Yvonne C. Dept. of Pharmacology and Neurobiology, University of Texas Medical School, Houston, TX 77025 **Dopamine receptor: isolation, purification, and regulation.** Advances in Biochemical Psychopharmacology. 21:159-167, 1980.

Dopamine receptor isolation, purification, and regulation, using a salt solution to extract a soluble dopamine binding site from subcellular fractions of the calf striatum is described. Because the salt extraction procedure has been used to isolate phosphorylatable proteins and protein kinases, the possible protein content of striatal potassium chloride extract and the possible regulation of the phosphorylation of these proteins by dopamine binding were investigated. The demonstration that cyclic AMP can phosphorylate specific proteins in a soluble extract of the striatum supports the hypothesis that cyclic AMP is intimately involved in dopaminergic synaptic transmission. These data, as well as other studies suggesting a cooperative nature between the multiple dopamine sites, raise the possibility that protein phosphorylation plays a significant role in the regulation of the D2 (a type of dopamine receptor in the anterior pituitary

which regulates the release of prolactin) receptor response. 15 references.

001012 Costa, E.; Guidotti, A.; Massotti, M.; Mazzari, S. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **The regulation of GABA receptors as a possible mechanism for GABA-1,4-benzodiazepine interactions. (Unpublished paper).** Washington, DC, NIMH, 1980. 12 p.

The view that the benzodiazepines act as anxiolytics by maximizing the function of GABAergic synapses is discussed. It appears that the site of action of the benzodiazepines could be associated to the high-affinity of GABA receptors. The possibility that these high-affinity GABA receptors are important in the regulation of C1-fluxes in NB2a cells is supported by the data presented. These data also show that the diazepam facilitates the action of GABA receptor agonists to increase the C1-fluxes in NB2a cells. 27 references. (Author abstract modified)

001013 Costa, Jonathan L.; Eanes, E. D.; Fay, Denise D.; Hailer, A. W. Clinical Neuropharmacology Branch, NIMH, Bldg. 10, 3D41, Bethesda, MD 20205 **Preparation and characterization of synthetic models for the dense bodies of human platelets. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 23 p.

Calcium pyrophosphate nucleotide precipitates have been formed in vitro with a composition which is essentially identical to that reported for the dense bodies (storage vesicles) of human platelets. The solution composition and effect of pH on precipitate formation, as well as the dissolution behavior and degree of protonation of the various species, were determined. The precipitates have similar composition and form equally well at pH 5.7 or 7.4, or with various monovalent counter ions in the starting solutions. In all cases, the adenine nucleotides appear to be associated with fewer protons than the corresponding species in free solution, and all precipitate components can exchange or dissolve rapidly unless the precipitate is maintained in a solution relatively rich in calcium and adenine nucleotides. These precipitates may serve as useful models for the examination of the relative contributions of the dense body membrane and core constituents to the uptake and storage of biogenic amines by human platelets. 22 references. (Author abstract)

001014 Costa, Jonathan L.; Fay, Denise D.; McGill, Manley. NIH Clinical Center, Bldg. 10, Room 3D41, Bethesda, MD 20205 **Electron probe microanalysis of calcium and phosphorus in dense bodies isolated from human platelets. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 14 p.

Electron probe microanalysis was used to examine the calcium and phosphorus content of human platelet dense bodies in intact cells and following isolation. In both preparations, differences in the net X-ray counts for phosphorus were not significant, although the isolated dense bodies produced an average of 31% higher net calcium counts than those in intact cells. In addition, the size of the dense body core in each of the two preparations was not significantly different. Thus, human platelet dense bodies can apparently undergo biochemical isolation without appreciable loss of their calcium or phosphorus content, and critical examination of storage and transport in the isolated organelles may produce conclusions relevant to similar processes in the intact platelet. 13 references. (Author abstract)

001015 Datta, Narayandas; Mondal, Panchali; Pauling, Peter. Mondal: William Ramsay, Ralph Forster, and Christopher Ingold Laboratories, University College London, Gower Street, London WC1, England **The crystal and molecular structure of the neuroleptic pimozide hydrochloride, 1-(1-(4,4-bis(4-fluorophenyl)butyl) 4-piperidyl) 2-benzimidazolinone HCl.** Acta Crystallographica. B35:675-678, 1979.

The crystal structure of pimozide HCl, a neuroleptic (major tranquilizer) drug with anticholinergic activity, was analyzed as part of a systematic study of substances affecting the peripheral and central nervous systems. Crystals of pimozide, C28H29F2N3O.HCl, are monoclinic, space group P21/c with unit cell dimensions a = 10.007 (3), b = 25.880 (9), c= 10.014 (4) angstroms, beta = 99.15 (7) degrees, Z = 4. The crystal structure was analyzed by the heavy atom method and refined by full matrix least squares calculations to a final R of 0.046. 3 references. (Author abstract modified)

001016 Delitala, G.; Yeo, T.; Stubbs, W. A.; Jones, Ann; Besser, G. M. Dept. of Endocrinology, St. Bartholomew's Hospital, London, England **Effect of serotonin on prolactin secretion in vivo.** Advances in Biochemical Psychopharmacology. 24:443-444, 1980.

To test the possibility that serotonin might stimulate PRL release through pituitary serotoninergic receptor mechanisms, the effect of serotonin on PRL secretion and the interaction of serotonin in the dopamine (DA) mediated inhibition of PRL secretion from continuously perfused columns of isolated rat anterior pituitary cells were investigated. Results demonstrate that the proposed PRL releasing activity of serotonin does not act directly through pituitary mechanisms and that serotonin does not interfere with the DA mediated inhibition of PRL. A role of hypothalamic serotoninergic neurons in stimulating PRL secretion is considered more probable. 3 references.

001017 Eiden, L. E.; Beinfeld, M. C.; Eskay, R. L. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **RIA and HPLC evidence for the presence of methionine enkephalin and cholecystokinin in the neural retina of several vertebrate species. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

The amount (ng/retina) of immunoreactive (IR) cholecystokinin (CCK) in the retina of several vertebrate species, as determined by radioimmunoassay (RIA) of methanolic (90%) extracts of tissue, is as follows: 15-day-old chick, 0.04; monkey, 0.6; rat, 0.2; frog, 1.7; and cow 3.4. The quantity (ng/retina) of IR-methionine enkephalin (Met Enk), as determined by RIA of 2N acetic acid, boiled extracts of tissue, is as follows: rat, less than 0.005; monkey, less than 0.01; cow, less than 0.1; frog, 4.6; and 5-day-old chick, 7.8. The addition of increasing volumes of retinal samples containing IR-CCK or IR-Met Enk to each of the standard assay systems, resulted in an inhibition of binding of the labelled peptide that paralleled the standard curve preparation. On the basis of reverse phase high performance liquid chromatography (HPLC), the Met Enk like IR in retinal tissue was found to have the same retention time as synthetic Met Enk. Furthermore, on the basis of reverse phase HPLC and a molecular sieve column, the CCK-like IR in the bovine retina was found to be the sulfated octapeptide CCK8. (Author abstract modified)

001018 Eiden, Lee E.; Eskay, Robert L. Neuroedocrinology Unit, Laboratory of Clinical Science, NIMH, Bldg. 10, 3N311, Bethesda, MD 20205 **Characterization of LRF-like immunoreactivity in the frog sympathetic ganglia: non-identity with LRF decapeptide. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 9 p.

Several antisera specific for luteinizing hormone releasing factor (LRF) and high pressure liquid chromatography (HPLC) were used to characterize immunologically the LRF-like immunoreactive substance (IR-LRF) in the frog sympathetic ganglia. The IR-LRF of the sympathetic ganglia is recognized by LRF antiserum R-42 but not by several other LRF antisera in a radioimmunoassay. Reverse phase HPLC allows the separation of sympathetic ganglion (SG) IR-LRF from LRF decapeptide. In contrast, frog brain IR-LRF which is identical to LRF deca-

peptide on the basis of its immunological characteristics and cochromatography with LRF decapeptide using reverse phase HPLC. The IR-LRF of frog SG may be structurally related to LRF decapeptide. It is suggested that IR-LRF may have an important role in endocrine regulation since IR-LRF with immunological and chromatographic characteristics similar to those found in the SG has also been found in other tissues including the adrenal medulla of the frog. 8 references. (Author abstract modified)

001019 Elliott, Arthur J.; Gold, Elijah H.; Guzik, Henry. Chemical Research Dept., Medicinals, Schering-Plough Pharmaceutical Research Division, Bloomfield, NJ 07003 **Synthesis of some 5-phenylhexahydroazepino(4,5-b)indoles as potential neuroleptic agents.** Journal of Medicinal Chemistry. 23(11):1268-1269, 1980.

The synthesis of some 5-phenlhexahydroazepino(4,5-b)indoles as potential neuroleptic agents is described. 5-Phenyl-1,2,3,4,5,6-hexahydroazepino(4,5-b)indole and five derivatives were prepared and screened for neuroleptic activity. None of the compounds antagonized methamphetamine aggregate toxicity in mice. A number of compounds, including 5-phenyl-1,2,3,4,5,6-hexahydroazepino(4,5-b)indole and its 3-methyl derivative, showed activity in the antidepressant screening procedures (tetrabenzazine-induced ptosis and inhibition of muricidal activity). 6 references. (Author abstract modified)

001020 Glennon, R. A.; Schubert, E.; Jacyno, J. M.; Rosecrans, J. A. Dept. of Pharmaceutical Chemistry, School of Pharmacy, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298 **Studies on several 7-substituted N,N-dimethyltryptamines.** Journal of Medicinal Chemistry. 23(11):1222-1226, 1980.

Several seven substituted derivatives of N,N-dimethyltryptamine (DMT) were prepared and evaluated in the rat fundus serotonin receptor assay and in a behavioral (discriminative stimulus) assay in rats. Both 7-Me-DMT and 5-OMe-7-DMT possess a higher pA2, and 5,7-(OMe)2-DMT a lower pA2, than that of DMT itself. Like DMT, all three of these compounds produce behavioral effects in rats which are similar to those of the hallucinogen 5-OMe-DMT. Although 7-Et-DMT and 7-Br-DMT possess a higher serotonin receptor affinity than DMT, neither produce behavioral effects which parallel those of 5-OMe-DMT. In contrast, 6-Me-DMT and its 5-OMe derivative do not interact with the serotonin receptors in a competitive manner and are inactive in the discriminative stimulus assay. 22 references. (Author abstract)

001021 Guranowski, Andrzej; Montgomery, John A.; Cantoni, Giulio L.; Chiang, Peter K. Chiang: Laboratory of General and Comparative Biochemistry, NIMH, Bethesda, MD 20205 **Adenosine analogs as substrates and inhibitors of S-adenosylhomocysteine hydrolase. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 24 p.

Data are presented to show that in the reaction, adenosine plus L-homocysteine is in equilibrium with S-adenosyl-L-homocysteine, catalyzed by S-adenosylhomocysteine hydrolase from beef liver, 11 nucleosides are able to substitute for adenosine to generate their corresponding S-nucleosidylhomocysteine congeners: 3-deazaadenosine, 2-aza-3-deazaadenosine, nebularine (purine ribonucleoside), formycin, N6-methyladenosine, 8-azaadenosine, adenosine-N1-oxide, pyrazomycin, 8-aminoadenosine, inosine, and the carbocyclic analog of adenosine ((-)-aristeromycin). S-adenosylhomocysteine hydrolase from lupin seeds is able to utilize all of these nucleosides except inosine to synthesize analogs of S-adenosylhomocysteine. There is no correlation between the ability of these nucleosides to function as substrates and their inhibitory potencies, except in the case of 3-deazaadenosine. The carbocyclic analog of adenosine is the most potent inhibitor of S-adenosylhomocysteine hydrolase with a Ki of 5x10 to the minus nine M. When incubated with 3T3-L1 fibroblasts, the carbocyclic analog of adenosine caused a 10-fold increase in the cellular concentration of S-adenosylhomocysteine. The cellular generation of S-2-aza-3-deazaadenosylhomocysteine was observed when 3T3-L1 fibroblasts were incubated with 2-aza-3-deazaadenosine. 41 references. (Author abstract)

001022 Hanus, L.; El-Sohly, M. A.; Turner, C. E. Dept. of Hygiene and Epidemiology, Palacky University, Allende Road 3, 775 15 Olomouc 5, Czechoslovakia **A contribution to our knowledge of coca leaf content substances.** Activitas Nervosa Superior. 22(3):220-221, 1980.

Coca alkaloids were isolated and identified from coca leaves of Peruvian origin. Dried leaves were crushed and extracted in ethanol, and the alkaloid fraction was shaken out of the extract. It was divided on a silica-gel-filled column. Partial fractions were purified by further column chromatogrphy and preparative thin layer chromatography. Identification of single alkaloids was made by comparison with standards of TLG, mesurement of IR, UV, NMR, and MS spectra and comparison of retention times with standards by gas chromatography. In this way, cocaine, trans-methylcinnamoylecgonine and cis-methylcinnamoylecgonine, ecgonine methylester, benzoylecgonine, pseudoecgonine methylester, cuscohygrine, and mesodihydrocuscohygrine were identified. 8 references.

001023 Hanus, L.; Turner, C. E.; El-Sohly, M. A. Dept. of Hygiene and Epidemiology, Palacky University, Allende Road 3, 775 15 Olomouc 5, Czechoslovakia **Isolation of psychoactive cannabinoid precursors from cannabis of Soviet provenience grown in Mississippi.** Activitas Nervosa Superior. 22(3):218-219, 1980.

The isolation of psychoactive cannabinoid precursors from cannabis of Soviet origin grown in Mississippi is described. The sample was dried, extracted in ethanol, and the obtained extract divided by column chromatography on silica gel. Partial fractions were analyzed by quantitative gas chromatography. Both delta9-tetrahydrocannabinol and delta9-THCV could be isolated from a fraction containing neutral substances. Its acid fraction yielded their precursors delta9-THC acid A and delta9-THCVA. An attempt at identification of delta8-THCA in this cannabis species failed. A total of 14 cannabinoids were identified in this species. 7 references.

001024 Helke, Cinda J.; Goldman, William; Jacobowitz, David M. Dept. of Pharmacology, Uniformed Services University of Health Sciences, Bethesda, MD 20014 **Demonstration of substance P in aortic nerve afferent fibers by combined use of flourescent retrograde neuronal labeling and immunocytochemistry. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 14 p.

Combined use of the intraaxonal retrograde transport of the flourescent marker true blue with substance-P (SP) immunocytochemistry has been used to trace the nodose ganglion projections of SP containing neurons of the aortic depressor nerve in male Wistar Kyoto rats. It was found that: 1) SP immunoreactive (SP-I) cell bodies are clearly demonstrable in clusters in the rostral part of the nodose ganglion without the aid of colchicine pretreatment; 2) true blue is retrogradely transported to the nodose ganglion following its application to the central cut end of the aortic nerve; and 3) true blue flourescence and SP flourescent immunoreactivity can be visualized in the same tissue section and certain cell bodies in the nodose ganglia contain both SP-I and retrogradely transported true blue. These results indicate that the aortic nerve which projects from the aortic arch baroreceptors and/or chemoreceptors to brainstem

vasomotor centers contains SP-I afferent fibers which emanate from the nodose ganglion. 27 references. (Author abstract)

001025 Herkenham, Miles; Pert, Candace B. Laboratory of Neurophysiology, Bldg. 36, Room 2D10, NIMH, Bethesda, MD 20205 **In vitro autoradiography of opiate receptors in rat brain suggests loci of paper).** Bethesda, MD, NIMH, 1980. 18 p.

The manner in which unfixed, slide-mounted sections of frozen rat brain can be radiolabeled in vitro, subsequently fixed with hot paraformaldehyde vapors and visualized by wet autoradiography with its higher resolution (thus avoiding a major obstacle to routine autoradiography of drug and neurotransmitter receptors where often only reversible ligands are available for radiolabeling) is reported. Resolution at the light level is sufficient to detect concordance between receptor patterns and terminal fields of axonal projections marked by tract tracing techniques. The opiate receptor distribution suggests the existence of widespread intrinsic and several longer multisynaptic opiate-ergic pathways within sensory and limbic circuits. One multisynaptic pathway may link olfactory structures with limbic circuits in the amygdala and habenula. Another may lie in limbic cortical structures. Receptors predominate in sensory systems, and within primary sensory nuclei (visual, auditory, olfactory, somatic) they are found superficially in laminated structures. Together, the opiate receptors are well placed to control incoming sensory and subsequent limbic information process. 31 references. (Author abstract modified)

001026 Hirata, Fusao; Axelrod, Julius. Section of Pharmacology, Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Biochemical mechanism of signal transduction across biomembranes. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Receptor proteins on cell surfaces serve as repositories for various molecular components that are necessary for the cells to receive and respond to external stimuli. It is suggested that the relationship of the biochemical events occurring in the cell after receptor stimulation can be described in the light of methylation of membrane lipids. The biochemical events are: 1) changes of cyclic nucleotide levels; 2) changes in permeability of ions; 3) phosphorylation of membrane proteins; and 4) increased turnover of phospholipids. (Author abstract modified)

001027 Hotchkiss, Adair; Pollard, Harvey B.; Scott, Janet; Axelrod, Julius. Laboratory of Clinical Science, Bldg 10, Room 2D47, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Release of arachidonic acid from adrenal chromaffin cell cultures during secretion of epinephrine. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Data are presented which show that a transient release of arachidonic acid (AA) accompanies secretion of epinephrine from primary cultures of bovine adrenal chromaffin cells. Cultures were grown for 5 to 6 days, then labelled for 3 hours with 3H-AA, washed, and incubated for another hour. The cells were then stimulated with nicotine, acetylcholine, or veratridine. Lipophilic constituents were extracted from the release media with ethyl acetate and chromatographed on thin-layer chromatography. The increase in radioactivity was found in a peak which cochromatographed with authentic AA. The increased release of 3H-AA was complete within 5 minutes, with no further increase up to 30 minutes. The effects of nicotine, acetylcholine, and veratridine were dose dependent with ED50s between 5 and 25mcM. These results suggest that the activation of a phospholipase-A and the liberation of AA from phospholipids may be a step in the sequence of events which leads to secretion of neurotransmitters. (Author abstract modified)

001028 Houghten, R. A.; Yamashiro, D.; Li, C. H. Hormone Research Laboratory, University of California, San Francisco, CA 94143 **Beta-endorphin and analogs: 360 MHZ proton NMR spectroscopy.** In: Gross, E., Peptides: structure and biological function. Pierce Chemical, 1979. (p. 869-872).

Beta-endorphin and several analogs were investigated by proton NMR spectroscopy. For the omission analogs examined, in each case marked and distinctive changes were found for the omission of a single amino acid from beta-C-endorphin, but nothing which was attributable to significant conformational changes. It is concluded that the altered biological activity of shortened sequences of beta-endorphin is not due to significant conformational changes in nonlipophilic, aqueous solution, but may arise from preferential changes for these peptides in the lipophilic medium. 8 references.

001029 Jones, G. P.; Andrews, P. R. Andrews: Victorian College of Pharmacy, Parkville, Victoria, 3052, Australia **Convulsant and anticonvulsant barbiturates. 1. Molecular conformations from classical potential-energy calculations.** Journal of Medicinal Chemistry. 23(4):444-448, 1980.

Conformational energy calculations are reported for a series of convulsant and anticonvulsant barbiturates derived from 5-ethyl-5-(1′-methylbutyl)barbituric acid (pentobarbital) by minor structural changes to the butyl side chain. A number of low energy conformations are identified for each barbiturate. In each case, substantial barriers to rotation exist between the alternative conformations, and the magnitudes of these barriers suggest that the barbiturates may be conformationally restricted even at physiological temperatures. Fully extended conformations, with both side chains perpendicular to the plane of the barbiturate ring, are favored. In the 1′-methyl derivatives, conformations with the 1′-methyl group located directly above the barbiturate are equally low in energy. 10 references. (Author abstract)

001030 Kalir, Asher. Israel Institute for Biological Research, Sackler School of Medicine, Tel Aviv University, Ness Ziona, Israel **Structure-activity relationship of phencyclidine derivatives.** Psychopharmacology Bulletin. 16(4):54-57, 1980.

Structural modifications of phencyclidine (PCP), such as replacement of each of the three rings by a different group or introduction of substituents into the rings, are discussed in relation to activity changes in the derivatives. Among replacements of the A-ring, thienyl enhanced central activity while aliphatic analogs showed a sharp drop in central potency; compounds with a three carbon chain appeared most active and the presence of an unsaturated bond enhanced activity. Substitution of nucleophilic amino or hydroxy groups into the A-ring also enhanced central activity. The antibutyrylcholinesterase potency of replacements to the B-ring depended on the structural changes in the region of the catatonic head and was low for primary and secondary amines, higher for tertiary derivatives, and highest for the quaternary salt of PCP. Replacements of or substitutions to the C-ring generally reduced central activity. 12 references.

001031 Kamenka, J. M.; Geneste, P. Laboratoire de Chimie Organique Physique Appliquee, Montpellier, Cedex France **Confirmation behavior of phencyclidines and biological activity.** Psychopharmacology Bulletin. 16(4):77-79, 1980.

Two conformations of phencyclidine (PCP) in solution, phenyl axial and phenyl equatorial conformations, were studied to determine which one was the active form at the receptor site. To bring to light this active form, anancomeric compounds (homogeneous conformational structures) were prepared as reference structures beside different stereoisomers with mobile conformations resulting from cyclohexyl substitutions. The relationship between conformation and biological activity was demon-

strated through the in vivo rotarod test and the in vitro binding experiments on a specific receptor in rat brain membranes. The binding to biological receptors of PCP and its derivatives most probably occurs in the thermodynamically most stable conformation with an axial phenyl group. 8 references.

001032 Klee, Werner A. Laboratory of General and Comparative Biochemistry, Bldg. 36, Room 3A19, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Opiate receptors in membranes and in solution. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Receptors which recognize opiates and opioid peptides are found in the cell surface membranes of neuronal cells. In at least one such cell type, the receptors are functionally coupled to adenylate cyclase as inhibitors, and thereby control cellular cyclic AMP levels. The dissociation of opiate receptors from a variety of cell membranes has been made possible with the aid of a novel detergent, CHAPS, a zwitterionic derivative of cholic acid. The solubilized receptors retain their binding activity and specificity in the presence of detergent, but are no longer coupled to adenylate cyclase. Receptors in solution are, however, sensitive to guanine nucleotide regulation and so are presumably still coupled to a regulatory component. Thus, solubilized receptors may exist as a complex of at least two different proteins together with lipid or detergent. (Author abstract modified)

001033 Klee, Werner A.; Streaty, Richard A. Laboratory of General and Comparative Biochemistry, NIMH, Bethesda, MD 20205 **Opioid dependent dual regulation of adenylate cyclase in a cell-free system. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 16 p.

A cell-free preparation of neuroblastoma (x) glioma NG108-15 hybrid cells which shows the essential features of opioid dependent, dual regulation of adenylate cyclase activity is described. In these hybrid cells, opioids exert a rapid inhibition of adenylate cyclase (resulting in lowered cyclic adenosine monophosphate (cAMP) levels), and after 1 to 2 days of culture, adenylate cyclase activity increases so cAMP levels are normal (the cells have become tolerant to opioid action). An important advantage of the cell-free system is the precision with which replicate assays may be performed since many experiments can be carried out with the same homogenates. Thus, relatively small increases in adenylate cyclase activity can be measured with confidence. Furthermore, since the experiments are rapid, large amounts of data can be accumulated within a short time. 14 references.

001034 Kopin, Irwin J. Laboratory of Clinical Sciences, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Assessment of adrenergic receptors in vivo in experimental animals and man. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 16 p.

The use of dose response curves which have four parameters (set, gain, threshold, and maximal response) in the assessment of adrenergic receptors in animals and man is discussed. Issues detailed are: labelling receptors in vivo; indirect measurement of receptors in vivo; pressor responses of pithed SHR and WKY rats; evaluation of presynaptic and postsynaptic alpha-adrenoceptors in pithed rats; and evaluation of adrenergic responses in humans. It is shown that dose response curves provide information regarding mechanisms of altered responsivity to receptor agonists, but provide only inferential information about receptors. Alterations in responsivity may be a consequence of changes in sensitivity or gain. These may be distinguished only by examination of the effects of more than one dose of agonist on the level of stimulation. If changes in responsivity are a consequence of a change in gain only, without a change in threshold, then receptor sensitivity is not altered and it is unlikely that the agonist/receptor interactions are involved in the production of the enhanced responses. 33 references.

001035 Koski, Greg; Simonds, William F.; Klee, Werner A. Klee: Laboratory of General and Comparative Biochemistry, Bldg. 36, Room 3A19, NIMH, Bethesda, MD 20205 **Guanine nucleotides inhibit binding of agonists and antagonists to soluble opiate receptors. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 17 p.

Data are presented to show that solubilized opiate receptors exhibit sensitivity to guanine nucleotides which decrease affinity of the receptors for opioid ligands. The solubilized receptor, which can be separated from fluoride-stimulated adenylate cyclase activity, may thus be part of a complex containing both an opiate-binding protein and a guanine nucleotide sensitivity regulatory component. The guanine nucleotides GDP, GTP, and GppNHp inhibit binding of opiates and opioid peptides to receptors solubilized from membranes of neuroblastoma (x) glioma NG108-15 hybrid cells. The inhibition reflects decreased affinity of receptors for opioid ligands. Whereas in membranes, only opioid agonist binding is sensitive to guanine nucleotide inhibition, both agonist and antagonist binding is reduced in the case of soluble receptors. Furthermore, soluble receptors are more sensitive to the effects of guanine nucleotides than are membrane-bound receptors. These observations are consistent with the suggestion that solubilized receptors may be complexes of an opiate binding protein and a guanine nucleotide sensitivity regulatory component. 18 references. (Author abstract modified)

001036 Lee, Kevin; Oliver, Michael; Schottler, Frank; Lynch, Gary. Lynch: Dept. of Psychobiology, University of California, Irvine, CA 92717 **Electron microscopic studies of brain slices: the effects of high frequency stimulation on dendritic ultrastructure. (Unpublished paper).** Research Report, NIMH Grant MH-19793, 1980. 41 p.

The question addressed was whether electron microscopic studies of rat brain slices could prove useful in approaching correlative anatomical/physiological analyses, such as determining whether treatments (which interfere with the induction of long-term potentiation) concurrently reduce the ultrastructural changes produced by repetitive stimulation. Also, an attempt was made to replicate the experiments in which the effects of repetitive stimulation were tested using anesthesized rats. Qualitatively, the ultrastructural appearance of the core of the slices proved to be surprisingly normal, the major disturbance being a generalized swelling of neuronal and glial elements as well as the occurrence of degenerating dendrites and teminals. This phenomenon and the effects of high frequency stimulation are discussed. 17 references.

001037 Lemkin, Peter F.; Lipkin, L.; Merril, C.; Shifrin, S. Park Building, Room 417, NIH, Bethesda, MD 20014 **Protein abnormalities in macrophages bearing asbestos. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 28 p.

Computerized techniques for the evaluation of O'Farrell two-dimensional electrophoretic gels have been applied to proteins derived from asbestos-bearing macrophages. Four methods of computer analysis of gel images (flicker comparison of gels to detect spot differences, spot densitometry, automatic spot segmentation and comparison, and spot data management) are discussed and demonstrated in spot analyses of control and asbestos-treated cells. Preliminary results indicate definite changes in the protein content of cells depending on fiber phagocytosis. 14 references. (Author abstract modified)

001038 Li, Choh Hao. Hormone Research Laboratory, University of California, San Francisco, CA 94143 **Chemistry of beta-**

endorphin. Advances in Biochemical Psychopharmacology. 20:145-163, 1979.

The structure, synthesis, and activity of beta-endorphin and related peptides are reviewed, and the amino acid sequences of ovine, porcine, and human beta-lipotropins are provided. The failure to find a correlation between opiate activity and immunoreactivity for these compounds is discussed. Present data indicate that beta-lipotropin serves as the prohormone for several biologically-active peptides, among which beta-endorphin is the most active. 62 references.

001039 Lukovits, Istvan; Lopata, Antal. Central Research Institute of Chemistry, Hungarian Academy of Sciences, Pusztaszeri u. 59, 1025 Budapest, Hungary **Decomposition of pharmacological activity indices into mutually independent components using principal component analysis.** Journal of Medicinal Chemistry. 23(4):449-459, 1980.

Principal component analysis was used to decompose various subsets of pharmacological activity indices for benzodiazepines, 8-quinolinol derivatives, and rifamycin-B amides into mutually independent components. Results suggest that biological activities are more effective in quantitative predictions than standard substituent constants. Decomposition of pharmacological activity component indices into mutually independent components yielded a main component for common factors of the physiological action of the molecules and a secondary component accounting for their dissimilarities. Factors that explain a low portion of the total sample variance of the subset may still account for important secondary effects. 23 references. (Author abstract modified)

001040 Maddox, V. H. Warner Lambert/Parke-Davis Pharmaceutical Research, Detroit, MI **The discovery of phencyclidine.** Psychopharmacology Bulletin. 16(4):53-54, 1980.

The development of phencyclidine in the late 1950s is described. In 1956, when Grignard reagents were reacted with cyano compounds with the intention of preparing ketones or stable imino compounds with possible analgesic activity, 1-(1-phenylcyclohexyl)piperidine hydrobromide was formed, which was neither a ketone nor an imine. This compound, phencyclidine, was tested for pharmacological properties the following year and was found to act mainly on the central nervous system, with effects varying between species. Most species showed symptoms of depression with a taming or quieting effect at low doses, a cataleptoid state at moderate doses, and surgical anesthesia at high doses. The first human clinical studies were reported in 1958, but these were later terminated because of the extent of treatment emergent phenomena. 3 references.

001041 Marangos, Paul J. Unit on Neurochemistry, Clinical Psychobiology Branch, NIMH, Bldg. 10, RM 48239, Bethesda, MD 20205 **Basic and clinical neurobiological applications of neuronal (NSE) and non-neuronal (NNE) enolase. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 12 p.

Recent work concerning the purification, characterization and applications of the brain enolases is summarized to show that the glycolytic enzyme enolase exists as three isoenzymes in brain. One isoenzyme is quite acidic composed of two gamma subunits and has been shown to be strictly localized to neurons and neuroendocrine cells. This form is designated neuron specific enolase or NSE. The least acidic form is composed of two alpha subunits and is strictly localized in glial cells within the nervous system. This form is designated nonneuronal enolase or NNE. The third form is a hybrid composed of one alpha subunit and one gamma subunit, and is believed to be present in partially differentiated neurons. It is demonstrated that, in light of the specific localization of NNE and NSE in nervous tissue and the availability of specific noncrossreacting antisera, these two antigens can be used as probes in a wide variety of neurobiological studies. Some of the potential applications of the neuronal and glial enolases in neuroanatomical, developmental neurobiological, neuroendocrinological, neuropathological, and clinical studies are discussed. 14 references. (Author abstract modified)

001042 Markey, S. P. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **High sensitivity negative chemical ionization mass spectral analysis of biogenic amines and metabolites. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

The use of electron capture negative chemical ionization mass spectrometry for the quantification of several biogenic amines and their methylated and deaminated metabolites is discussed. Succcessful realization of higher sensitivity than that attainable by positive electron or chemical ionization mass spectrometry requires derivatization to form highly electron capturing comporids which retain structural specificity upon ionization. For example, perfluoracylation of alcohols and amines is useful for some assays, but these derivatives of some polyfunctional molecules may fragment to yield only perfluroacyl ions. Derivatization with hexafluoroacetone has been useful for 1,2 substituted amino alcohols or glycols due to the formation of relatively stable cyclic derivatives with excellent negative chemical ionization mass spectral characteristics. High sensitivity assays of compounds present in low concentration in biofluids can be significantly improved by separating the analyte from sources of interfering chemical background. For derivatized substances, most of the electron capturing background is formed during derivatization. By selecting stable derivatives, it is possible to use post-derivatization separations, such as silica gel column chromatography. Problems unique to high sensitivity assay of endogenous compounds are specificity and the selection of procedural blanks. It is particularly important to monitor more than a single ion for specificity in quantitation. (Author abstract modified)

001043 Markey, S. P.; Tetsuo, M.; Johannessen, J.; Lewy, A. J.; Taylor, P. L. Laboratory of Clinical Science, NIMH, Bldg. 10, 3N311, Bethesda, MD 20205 **Mass spectrometric assays of indoleamines. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

A gas chromatographic, mass spectrometric assay technique was developed and applied to the quantification of serotonin (5-hydroxytryptamine) and several of its metabolites (N-acetyl serotonin, melatonin, and 6-hydroxymelatonin-sulfate) in various physiological fluids. The biochemical matrix and each indoleamine's extraction characteristics, stability, derivatization chemistry, and gas chromatography are sufficiently different to require individual assays for each component. Deuterated internal standards have been prepared for each amine. Isotope dilution mass spectrometric assays of indoleamines in human clinical studies yield results consistent with animal enzyme data, but often in contrast to results from less specific assay methods. Results for the analysis of serotonin (in platelets, neural tissue, and cerebrospinal fluid); melatonin (in plasma); and 6-hydroxymelatonin sulfate (in urine) have been contrasted to the literature values derived from bioassay, radioimmunoassay, or alternative gas chromatographic mass spectrometric assay. (Author abstract modified)

001044 Mayer, Wilfried J. W.; Markey, S. P. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Synthesis of 18O-analogs of biogenic amines. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

General synthetic schemes useful for the preparation of highly enriched common intermediates for the synthesis of 180-ring labelled catecholamines and their metabolites are discussed. The activation of halobenzenes by means of their chromium tricarbonyl complexes (CTC) was used to convert o-dihalobenzenes (F, Cl) into catechols. The results demonstrate that o-dihalobenzenes pi-complexed with chromium tricarbonyl also show an enhanced reaction rate towards nucleophiles such as alkoxide ion. There is a distinct difference in reactivity of the CTC-derivatives of o-difluorobenzene and o-dichlorobenzene. Chromium tricarbonyl complexes of o-difluorobenzene are suitable substrates for the convenient and effective introduction of two labelled oxygen atoms into an aromatic ring. This appears to be the method of choice for the preparation of a di-180-labelled catechol building blocks for the synthesis of labelled catecholamines if direct labelling of catecholamines via exchange reaction is not applicable. (Author abstract modified)

001045 Mazzari, S.; Leon, A.; Massotti, M.; Guidotti, A.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Assaying GABA-modulin activity in brain extracts: resolution of inherent difficulties. (Unpublished paper).** Washington, DC, NIMH, 1980. 9 p.

A rapid method that can be used to prepare extracts suitable to measure GABA modulin content is presented. The procedures that must be followed in order to purify and measure GABA modulin in crude synaptic membranes (CSM) are summarized, and the thermo and biological stability of the GABA modulin in the CSM extracts is discussed. Three steps are essential to purify the extract: 1) homogenization in 5mM Tris-citrate buffer containing 0.05% Triton(x)100; 2) centrifugation at 105,000 x g x 1hr; and 3) filtration of supernatant on Biogel P2 column by centrifugation. Data indicate that heat inactivation of extracts of CSM and fresh CSM extracts prepared from rat brain contain in the high molecular weight fraction a similar capacity to inhibit high affinity GABA binding. Two steps are used to check the purity of the material being assayed or to be certain that the material being assayed has the right molecular weight: 1) Sephadex G-50 gel chromatography; and 2) S.D.S. polyacrylamide gel electrophoresis. 9 references.

001046 Moody, T. W.; O'Donohue, T. L.; Jacobowitz, D. M. Jacobowitz: Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Biochemical localization and characterization of bombesin-like peptides in discrete regions of rat brain. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 13 p.

A radioimmunoassay using an antiserum which recognizes the C-terminal of bombesin was used to determine the regional distribution of bombesin-like peptides in discrete regions of rat brain. The concentration of endogenous bombesin-like peptides was 30-fold greater in high (substantia gelatinosa, nucleus tractus solitarius, interpeduncular nucleus, and arcuate nucleus) than low regions (caudate, hippocampus, and cingulate cortex). When brain extracts were fractionated using high pressure liquid chromatography techniques two major peaks of immunoreactivity were obtained, the more hydrophobic peptide coeluted with bombesin methionine sulfoxide. It is concluded that the current evidence supports the contention that bombesin may be a neuroactive peptide in the brain. 29 references. (Author abstract)

001047 Oertel, W. H.; Schmechel, D. E.; Tappaz, M. L.; Kopin, I. J. Laboratory of Clinical Science, NIMH, Bldg. 10, Rm. 2D-46, Bethesda, MD 20205 **Production of a specific antiserum to rat brain glutamic acid decarboxylase (GAD) by injection of an antigen-antibody complex. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 43 p.

Production of an antiserum specific to rat brain glutamic acid decarboxylase (GAD) is described, featuring the reinjection of an antigen GAD antibody complex. Partial purification of GAD was first achieved through differential centrifugation, ammonium sulfate fractionation, chromatography on Sephadex G-150, preparative isoelectric focusing in sucrose gradient, and polyacrylamide gel electrophoresis for the production of a preliminary polyvalent, so called brain homogenate supernatant antiserum No. 1237 maximally inhibited GAD enzyme activity by 80% but on precipitation of the antibody enzyme complex, all activity was removed. The antibody, however, was polyvalent, as in crossed immunoelectrophoresis (CIE) it detected four antigens in rat brain homogenate supernatant and three antigens in a 150-fold purified GAD enzyme preparation. One of these three precipitation lines could be radioactively labelled by 2-3H-gamma-acetylenic GABA, an irreversible inhibitor of GAD. Reinjection of this antigen antibody precipitation line into another sheep (No. 1440) yielded an anti-GAD antiserum No. 1440 which slightly inhibited but maximally precipitated 85% of the GAD enzyme activity in rat brain homogenate supernatant. In CIE, antiserum No. 1440 detected one antigen in the 150-fold purified enzyme preparation and in CIE with intermediate gel altered the mobility of one antigen in brain homogenate supernatant. Thus, according to precipitating characteristics, the antibody appears to be specific to GAD. 48 references. (Author abstract)

001048 Oertel, W. H.; Schmechel, D. E.; Weise, V. K.; Ransom, D. H.; Tappaz, M. L.; Krutzsch, H. C.; Kopin, I. J. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Comparison of cysteine sulphinic acid decarboxylase (CSD) isoenzymes and glutamic acid decarboxylase (GAD) in rat: is brain CSD I identical with liver CSD and brain CSD II with GAD? (Unpublished paper).** Bethesda, MD, NIMH, 1980. 44 p.

The hypothesis that two isoenzymes of cysteine sulfinic acid decarboxylase (CSD) are present in brain, termed CSD-I and CSD-II, and that brain CSD-I is identical to liver CSD, and brain CSD-II is identical to glutamic acid decarboxylase (GAD) was tested. Rat brain cysteine sulphinic acid decarboxylase activity was separated on amino-ethyl-Sepharose into two peaks, termed CSD-I and CSD-II. The second peak of CSD activity (CSD-II) was found to posses GAD activity. When rat brain CSD and liver CSD activity were chromatographed in parallel experiments, liver CSD eluted at the same fraction as brain CSD-I. From experiments conducted on CSD-I and CSD-II, it was concluded that a protein present only in brain possesses both GAD and brain CSD-II enzyme activity, or that GAD and brain CSD-II activities are represented by two molecules with characteristics so similar that they cannot be separated by the biochemical or immunological techniques so far employed, and that a second CSD enzyme (brain CSD-I) is present in rat brain which has characteristics identical or similar to liver CSD. 54 references. (Author abstract modified)

001049 Palmour, R. M.; Ervin, F. R. Dept. of Genetics, University of California, Berkeley, CA 94720 **Biochemical and pharmacological characterization of a peptide from the hemodialysate of psychotic patients.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 812-817).

The biochemical and pharmacological characterization of a novel endorphin peptide from the hemodialysate of psychotic patients is reported, with an emphasis on data obtained from the first and sixteenth hemodialysates of 12 psychotic patients. It was hypothesized and confirmed (through radioimmunoassay of isolated and synthetic LE) that leu5-beta-endorphin (LE), as compared with met5-beta-endorphin (ME), is a genetically variant neuropeptide with leucine, rather than methionine, occuring

in position 5. Further research is needed to determine the relationships between circulating LE, psychotic disorder, and/or hemodialysis; to study the possibility that high LE levels are the consequence of long-term treatment with antipsychotic drugs; to assess aberrant stress response as a precipitating factor; and to examine potential physiological disruptions arising from the presence of LE, rather than ME in the dialysate. The high levels of circulating in the Ss and the long duration of electrophysiological action of LE suggest that LE may be degraded more slowly than ME, while pharmacological studies point to slightly different interactions at the receptor site. 15 references.

001050 Pert, C. B.; Taylor, D. P.; Pert, A.; Herkenham, M. A.; Kent, J. L. Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Biochemical evidence for Type 1 and Type 2 opiate receptors. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 11 p.

Guanosine triphosphate (GTP) reduction of opiate agonist binding was used as an index of the extent of adenylate cyclase coupling in an examination of the possibility that opiate receptors can be classified as coupled (Type-1) and uncoupled (Type-2) opiate receptors. Since the GTP-sensitive and GTP-insensitive receptors have demonstrated different ligand selectivities, the regional distribution of the binding of (3H)leu-enkephalin, the ligand with the most marked preference for Type-2 receptors, can be compared with (3H)naloxone binding, which markedly prefers Type-1 receptors, to estimate the relative enrichment of these receptor types. Estimates of relative Type-1 and Type-2 opiate receptors from 16 areas of rat brain are presented. Suggestions for future research are given. 20 references.

001051 Picciola, G.; Carissimi, M.; Ravenna, F.; Gentili, P.; Carenini, G. Ravenna: Laboratorio Ricerche, Maggioni Farmaceutici S. p. A., Casella Postale 3390, I-20133 Milan, Italy **Cyclohexylphenoxy amidoximes and imidazolines with antidepressive and alpha-adrenergic activity.** Arzneimittel-Forschung. 29(5):729-738, 1979.

The effect of variation of the cycloaliphatic residue position on pharmacological activity was studied in two series of cyclohexylphenoxy derivatives (A and B). The ortho derivatives generally exhibit remarkably strong activity; (A) has an imipramine-like pharmacological profile; (B) with Y=H is more active than naphazoline and xylomethazoline as a vasoconstrictor. The meta and para substituted derivatives and all (B) derivatives with R=CH3 exhibited no definite or interesting pharmacological activities. It is noted that the amidoximes frequently have a thymoleptic type of action on the CNS, similar to that of the tricyclic antidepressant drugs. 24 references. (Author abstract modified)

001052 Porsche, E.; Stefanovich, V. Biochem. Abt., Hoechst Aktiengesellschaft, Werk Albert, Postfach 12 91 01, D-6200 Wiesbaden 12, West Germany /**The influence of pentifylline and theophylline on reaction kinetics of catecholamine-stimulated AtPase from rat brain.**/ Der Einfluss von Pentifyllin und Theophyllin auf die Reaktionskinetik von Katecholamin-stimulierbarer ATPase aus Rattenhirn. Arzneimittel-Forschung. 29(8):1089-1092, 1979.

The effects of 1-hexyl-3,7-dimethyl-xanthine (pentifylline, Cosaldon) and theophylline on rat brain Na-, Mg2- ATPase activities were investigated in in vitro experiments. It was established that pentifylline inhibits catecholamine-sensitive ATPase in a dose-dependent manner; and that theophylline is without effect. Pentifylline also inhibits the Mg2- dependent portion of Na-, MG2- ATPase. The effect of pentifylline on the kinetic parameters of Na-, K-, Mg2-ATPase of synaptosomes was studied in detail and the results are reported. Other findings indicate that inhibition of ATPase by pentifylline is not influenced by the change in Na/K ratio in the incubation medium. In all experiments, theophylline used as a standard was without effect on the reaction kinetics of Na-, K-, ATPase. 6 references. (Journal abstract modified)

001053 Russell, James; Bennett, Carl; Gainer, Harold; Brownstein, Michael J. Laboratory of Developmental Neurobiology, NICHD, Bethesda, MD 20205 **Biosynthesis of posterior pituitary hormones. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 8 p.

Data are presented to show that peptide hormones are synthesized in neurosecretory neurons in much the same way as they are in other secretory cells: these neurons, however, may integrate and respond to many more inputs than do endocrine cells. A pulse labeling paradigm was used to identify separate precursors for the vasopressin-associated neurophysin and the oxytocin-associated neurophysin. The data suggest that vasopressin resides in the middle of the precursor. In contrast to vasopressin, neurophysin is liberated from the vasopressin/neurophysin precursor rapidly and in a form indistinguishable from that of native neurophysin. The amino acid composition and sequence of a glycopeptide (glyco I) that is believed to be a derivative of the vasopressin/neurophysin precursor are provided. The data indicate that the neurophysin precursors are packaged into granules in the neuronal perikarya and transported into the axons of the cells. There they undergo processing into active hormones. 20 references.

001054 Schwartz, J. C.; Barbin, G.; Duchemin, A. M.; Garbarg, M.; Palacios, J. M.; Quach, T. T.; Rose, C. Unite de Neurobiologie, Centre Paul Broca de l'INSERM, 2ter rue d'Alesia, F-75014 Paris, France **Histamine receptors in the brain: characterization by binding studies and biochemical effects.** Advances in Biochemical Psychopharmacology. 21:169-182, 1980.

Two lines of evidence concerning histamine (HA) receptors in the brain are reviewed: 1) quantification of biochemical responses to HA in in vitro systems; and 2) direct study of the recognition moiety of receptors with 3H-ligands either in vitro or in vivo. Topics discussed include: involvement of H1 and H2 receptors in the stimulation of cyclic AMP accumulation in brain slices; HA-induced glycogenolysis in brain slices and the possible mediation of this response by H1 receptors; in vivo labeling of H1 receptors in brain with 3H-mepyramine as a test to predict sedative properties of drugs; and the possibility of high affinity 3H-histamine binding sites in the brain receptors. 41 references.

001055 Silverman, Richard B.; Hoffman, Stephen J. Department of Chemistry, Northwestern University, Evanston, IL 60201 **Mechanism of inactivation of mitochondrial monoamine oxidase by N-cyclopropyl-N-arylalkyl amines.** Journal of the American Chemical Society. 102:884-886, 1980.

A scheme for the oxidation of mitochondrial monoamines by monoamine oxidase (MAO) and a scheme (scheme-II) for the inactivation of MAO by N-cyclopropyl-N-arylalkyl amines are detailed. The experiments from which mechanism-based inactivation of MAO by N-cyclopropyltryptamine and N-cyclopropylbenzylamine was concluded are reviewed, and the results from which the mechanism of the inactivation was deduced are presented. These results suggest that the N-cyclopropyl-N-arylalkyl amines differ considerably from the propargyl amines in which the resulting covalent bond with the enzyme is stable. The mechanism of inactivation of MAO by N-cyclopropyl-N-arylalkyl amines (scheme-III) is consistent with the data obtained. 21 references.

001056 Simonds, William F.; Koski, Greg; Streaty, Richard A.; Hjelmeland, Leonard M.; Klee, Werner A. Laboratory of General and Comparative Biochemistry, NIMH, Bethesda, MD 20205 **Solubilization of active opiate receptors. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 23 p.

Receptors which reversibly bind opiates and opioid peptides have been solubilized from brain and neuroblastoma/glioma hybrid cell NG108-15 membranes. Solubilization of active receptors is specifically effected with a new type of detergent 3-((3-cholamidopropyl)dimethylammonio)-1-propanesulfonate which is a zwittterionic derivative of cholic acid. The solubilized receptor complexes behave as large molecules, which exhibit a Stokes radius of 70A, and contain protein as an essential constituent. 18 references. (Author abstract)

001057 Stone, A. L.; Reaves, B. J.; Rosenberg, R. D. Sidney Farber Cancer Institute, Boston, MA 02115 **Comparison of highly-active and activity-depleted heparin by circular dichroism spectroscopy. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Highly active (HA) and activity depleted (Dpl) heparin fractions consisting of 10 dimers were examined by circular dichroism (CD) spectroscopy (and other physical methods) for structural aspects of their carboxyl and amino sugar chromophores at pH 7.4 and through the pH range of protonization of carboxyl groups. HA and Dpl fractions behaved like different polysaccharides in regard to: 1) comparison of their CD spectra with those predicted for 6500 chains by addition of CD spectra of their component unsulfated glycosides; 2) changes in CD spectra as a result of protonation of the carboxyl groups; and 3) pH of onset of change in total negative charge and alteration in chiral absorption. Frequently shifts occurred in both Dpl and HA in absorption region of amino sugar chromophore, while additional hypochromic effect was evident only with HA. Furthermore, the CD of Dpl, but not HA, shifted with pH roughly as predicted. Results suggest that active tetrasaccharide sequence imparts unique factors governing chiral absorption of both chromophores, which may or may not extend to neighboring tetrasaccharides in the chain. (Author abstract modified)

001058 Tetsuo, Masahiro; Markey, Sanford P.; Colburn, Robert W.; Kopin, Irwin J. Markey: Laboratory of Clinical Science, NIMH, Building 10, Room 3N311, Bethesda, MD 20205 **Quantitative analysis of 6-hydroxymelatonin in human urine by gas chromatography-negative chemical ionization mass spectrometry. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 23 p.

Following a demonstration of the occurrence of endogenous 6-hydroxymelatonin (a major metabolite of the pineal hormone melatonin conjugates (mostly sulfate) in human urine by gas chromatography/mass spectrometry, a quantitative assay for conjugated 6-hydroxymelatonin was developed to estimate the total rate of melatonin production and changes in this rate during different intervals of the day. After addition of an internal standard of deuterated 6-hydroxymelatonin sulfate, human urine was hydrolyzed enzymatically and free 6-hydroxymelatonin extracted, reacted to form a stable t-butyldimethylsilypentafluoropropionyl derivative which was separated on silica gel column chromatography and quantified using electron capture negative ion chemical ionization mass spectrometry. Intraassay variability over an 18-hour period was 5.4% and interassay variability over a 2-week period was 2.1%. 18 references. (Author abstract modified)

001059 Ti, Jen-Shing; Steinfeld, Alvin S.; Naider, Fred; Gulumoglu, Ali; Lewis, Sam V.; Becker, Jeffrey M. Naider: Chemistry Dept., College of Staten Island, City University of New York, Staten Island, NY 10301 **Anticandidal activity of pyrimidine-peptide conjugates.** Journal of Medicinal Chemistry. 23(8):913-918, 1980.

The ability of conjugates of peptides and 5-fluorocytosine or 5-fluoroorotic acid to permeate cell membrane of Candida albicans was investigated. A number of conjugates of 5-fluoroorotic acid and peptides were synthesized using 1-(ethoxy-carbonyl)-2-ethoxy-1,2-dihydroquinoline as the coupling agent. Orotyl-L-leucyl-L-leucine, 5-fluoro-4-(N-succinamoyl-L-alanyl-L-leucine)-2(1H)pyrimidinone (a 5-fluorocytosine derivate), and 5-fluoroorotyl-L-leuycyl-L-leucine all inhibited the uptake of trimethionine into C. albicans WD 18-4. Inhibition by 5-fluoroorotyl-L-leucyl-L-leucine was competitive as judged using double reciprocal plots. Evaluation of minimum inhibitory concentrations of peptide-5-fluorocystosine conjugates suggest that these conjugates center C. albicans in the intact form. It is noted that these results provide the first experimental evidence that peptides can carry pyrimidines into a eukaryote. 18 references. (Author abstract modified)

001060 Watanabe, Kazuho; Minamiura, Noshi; Yasunobu, Kerry T. Dept. of Biochemistry-Biophysics, John A. Burns Medical School, University of Hawaii, Honolulu, HI 96822 **Thiols liberate covalently bonded flavin from monoamine oxidase. (Unpublished paper).** Research Report, NIMH Grant MH-21539, 1980. 12 p.

Data are presented to show that, although it has been recommended that 2-mercaptoethanol be added to all buffers used in monoamine oxidase purification, purification of the enzyme in the absence of thiols has yielded double the amount of enzyme. In fact the presence of 0.1M 2-mercaptoethanol or dithioerythritol-SDS was found to liberate about 50% of the covalently-bonded FAD. This observation is surprising since the covalently bonded flavin has been reported to be 8-alpha-cysteinyl-FAD. There is a thioether linkage between the flavin and the protein, and mild reducing agents such as mercaptoethanol would not normally cleave the thioether linkage. The importance of the present finding is that the thiols may be used possibly to liberate suicide substrate-flavin adducts from the enzyme for structural studies without isolating pure flavin peptides. The flavin can be removed simply by treatment of the enzyme with 0.1M thiol solution containing 1% sodium dodecylsulfate followed by chromatography on Sephadex G-25. 10 references. (Author abstract)

001061 Wecker, Lynn; Goldberg, Alan M. Dept. of Pharmacology, Louisiana State University Medical Center, New Orleans, LA 70112 **Regulation of acetylcholine release during increased neuronal activity. (Unpublished paper).** Research Report, NIMH Grant 5R01-MH-33443, 1980. 19 p.

In order to characterize the nature of the regulatory process(es) and elucidate the determinant effects of the availability and transport of choline on the metabolism of acetylcholine (ACh), the physiological status of the neuron has been taken into account. It is hypothesized that consideration of both the supply to and the demand of the system for choline will clarify the relationship between neuronal activity and possible regulatory mechanisms. The results indicate that the mechanisms involved in the regulation of the metabolism of ACh are directly influenced by neuronal activity. During nondepolarized physiological states (5mM potassium), there is apparently a sufficient supply of choline to meet the demands imposed on the cholinergic neuron. However, when the economic stability of the system is altered, by either increasing the demand for, or decreasing the supply of choline, then the regulatory mechanisms may adapt to the needs of the immediate environment. The evidence supports the premise that neurotransmitter regulatory mechanisms are highly dependent on the physiological status of the neuron and that neuronal activity or pathological conditions

must be considered for valid evaluation of the primary determinants regulating the dynamics of neurotransmitter metabolism. 52 references.

001062 Wood, P. L.; Cheney, D. L.; Costa, E. Dept. of Pharmacology, Merck Frosst Labs., P.O. Box 1005, Pointe Claire, Dorval 700, Quebec H 9R 4P8, Canada **Interactions of neuropeptides with cholinergic septal-hippocampal pathway: indication for a possible transsynaptic regulation. (Unpublished paper).** Washington, DC, NIMH, 1980. 21 p.

Acetylcholine turnover (TRACh) was measured in the septal hippocampal cholinergic pathway by means of gas chromatography mass spectrometry. These measurements yield an accurate index to estimate the activity of septal cholinergic neurons. The actions of several peptides on TRACh in this pathway were examined, and it was found that an inhibitory beta-endorphin input to the septum decreased hippocampal TRACh. This input, in contrast to that of substance-P, was dependent upon septal GABAergic interneurons. Somatostatin and alpha-MSH, on the other hand, appeared to act on cholinergic nerve endings in the hippocampus to increase TRACh, suggesting the presence of peptidergic interneurons within the pyramidal fields of the hippocampus. The actions of prolactin were also investigated. The depressant activity of this peptide appears to represent a neuroendocrine modulation of hippocampal TRACh which is dependent upon dopaminergic input to the septum. In summary, these data indicate that peptides are intricately involved in the regulation of activity within the septal-hippocampal pathway. These regulatory influences include peptidergic input both to the cholinergic cell bodies and terminals as well as neuroendocrine factors. 22 references. (Author abstract)

001063 Youle, Richard J.; Neville, David M., Jr. Section on Biophysical Chemistry, Laboratory of Neurochemistry, NIMH, Bethesda, MD 20205 **Hybrid proteins used to study the mechanism of toxin entrance into cells. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 6 p.

The receptor specificity of two toxins, diphtheria toxin and ricin, was modified by covalently linking them to new binding moieties, and the hybrid proteins were used to study the mechanism and requirements of toxin entrance into cells. These hybrids show that toxins can enter and kill cells via new receptors. A general feature of many bacterial toxins is the structure of two polypeptide chains linked by a disulfide bond (the B-chain usually attachs to the cell and the A-chain crosses the lipid bilayer to enter the cell), and the two chains' roles in cell intoxication are explored. The hybrid technology described also yields cell type specific toxins which will have uses in selecting specific receptor minus mutant strains of cells and possibly result in therapeutically useful antitumor reagents. 11 references.

001064 Youle, Richard J.; Neville, David M., Jr. Section on Biophysical Chemistry, Laboratory of Neurochemistry, NIMH, Bethesda, MD 20205 **Anti-Thy 1.2 monoclonal antibody linked to ricin is a potent cell type specific toxin. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 17 p.

The successful modification of ricin's native receptor and cell type specificity to that dictated by a covalently-bound monoclonal antibody is demonstrated: specifically, monoclonal anti-Thy 1.2 rat IgG2b was covalently coupled to ricin. It is demonstrated that potent cell type specific toxins can be made by the proper alteration of toxin binding specificity. The data show that a monoclonal antibody can be used as the receptor binding moiety of a hybrid toxin and will define the hybrid cell type specificity. By coupling Thy 1.2 specific monoclonal antibody to ricin and blocking the ricin galactose binding site with lactose it was possible to alter the receptor specificity of ricin. Under these conditions the reagent, anti-Thy 1.2-ricin, is 700 times more toxic to T-cells which contain the Thy 1.2 surface antigen than to cells lacking it. This degree of selectivity can allow one to kill antigen-bearing cells and not other cells in tissue culture. This differential of toxicity may be sufficient to selectively kill antigen bearing cells in vivo. The use of monoclonal antibodies as the cell recognition moiety of toxin hybrids greatly expands the possible uses of antibody/toxin hybrids. It is suggested that there is considerable scientific and pharmacologic potential for these potent monoclonal antibody/ricin hybrids as cell type and tumor specific toxins. 33 references.

001065 Zeidan, Hussein; Watanabe, Kazuho; Piette, Lawrence H.; Yasunobu, Kerry T. Dept. of Biochemistry-Biophysics, University of Hawaii School of Medicine, Honolulu, HI 96822 **ESR studies of spin labelled bovine liver monoamine oxidase B. (Unpublished paper).** Research Report, NIMH Grant MH-21539, 1979. 30 p.

ESR spin labeling was used to probe the structure of the active site of bovine liver monoamine oxidase. A series of spin labels was employed to explore the environment of the essential sulfhydryl groups in the enzyme. The spin labels consisted of nitroxide-coupled maleimide (or iodoacetamide) derivatives in which the reporter nitroxide group is separated by varying chain lengths. Both sets of spin labels preferentially bind to the essential sulfhydryl group under appropriate conditions. From the change in the ESR spectra, it appears that the essential sulfhydryl group is located in a shallow crevice. The effect of a competitive inhibitor, pH, urea denaturation on the active site conformation as measured by the spin labels was studied. The use of double spin-labeling in which a spin-labeled competitive inhibitor and spin-labeled sulfhydryl reagent were used suggested that the essential sulfhydryl residues are a part of the active site. 19 references. (Author abstract)

001066 Zeidan, Hussein; Watanabe, Kazuho; Piette, Lawrence H.; Yasunobu, Kerry T. Dept. of Biochemistry-Biophysics, John A. Burns Medical School, University of Hawaii, Honolulu, HI 96822 **ESR studies of bovine plasma amine oxidase: probing of the environment about the substrate liberated sulfhydryl groups in the active site. (Unpublished paper).** Research Report, NIMH Grant MH-21539, 1980. 29 p.

A series of nitroxide spin labeled reagents was employed to explore the environment of the cysteine residues in bovine plasma amine oxidase. When the enzyme was reduced by substrate or phenylhydrazine, one essential sulfhydryl residue per subunit was liberated. This cysteine residue was then reacted with the spin label 3-(maleimido-methyl)-2,2,5,5-tetramethyl-1-pyrrolinyloxyl. The ESR spectra of the labeled enzyme derivatives suggested that this essential sulfhydryl residue is located in a pocket, whereas the nonessential sulfhydryl residues are probably located near the surface. By varying the length of the nitroxide spin-labeled NEM derivatives, it was determined that the liberated essential cysteine residues are in a restricted environment. The ESR spectral data also suggested that the nitroxide radical and the essential copper in the enzyme do not interact with one another. The effect of ionic strength, pH, and urea denaturation on the environment of the essential sulfhydryl residue were also investigated. 20 references. (Author abstract)

02 DRUG DEVELOPMENT (PRECLINICAL SCREENING)

001067 Airaksinen, Mauno M.; Svensk, Heikki; Tuomisto, Jouko; Komulainen, Hannu. Dept. of Pharmacology, University of Kuopio, P.O.B. 138, SF-70101 Kuopio, Finland **Tetrahydro-beta-carbolines and corresponding tryptamines: in vitro inhibition of serotonin and dopamine uptake by human blood platelets.** Acta Pharmacologica et Toxicologica. 46(4):308-313, 1980.

Tetrahydro-beta-carbolines (THBCs), 6-methoxyharmalan, norharman, and corresponding open chain tryptamines inhibited the uptake of 5-hydroxytryptamine (5-HT) and dopamine (DA) in human blood platelets. THBCs were generally much more potent as inhibitors of 5-HT uptake than of DA uptake, but 1-methyl-THBCs were better inhibitors of DA uptake. THBCs were more potent than the corresponding tryptamines with the freely-rotating ethylamine side chain. Unsaturated beta-carbolines were weaker inhibitors than THBCs. These findings in human platelets differ markedly from those obtained in rat brain synaptosomes. 32 references. (Author abstract modified)

001068 Balsara, J. J.; Chandorkar, A. G. Dept. of Pharmacology, Dr. V.M. Medical College, Solapur (Maharashtra), India **Experimental evaluation of antidepressant activity of clomipramine, a new tricyclic antidepressant drug.** Materia Medica Polona. 11(2):107-114, 1979

The antidepressant activity of clomipramine, a newly-introduced tricyclic drug, was evaluated experimentally and compared with imipramine and desipramine. Specifically, the effect of pretreatment of reserpine-induced ptosis and catalepsy in rats, reserpine-induced emesis in pigeons, methamphetamine-induced stereotypic behavior in rats, and on L-Dopa and 5HTP-induced behavioral syndromes in mice were studied. Although clomipramine was less effective than imipramine and desipramine in antagonizing reserpine-induced ptosis and catalepsy in rats and reserpine-induced emesis in pigeons, it was as effective as imipramine and desipramine in potentiating methamphetamine-induced stereotypic behavior and in intensifying L-Dopa and 5-HTP-induced behavioral syndromes. The results suggest that clomipramine will be clinically as effective as the other two compounds as an antidepressant drug. 31 references. (Author abstract modified)

001069 Blank, Benjamin; Krog, Arnold J.; Weiner, Gilbert; Pendleton, Robert G. Division of Research and Development, Smith Kline and French Labs., Smith Kline Corp., Philadelphia, PA 19101 **Inhibitors of phenylethanolamine N-methyltransferase and epinephrine biosynthesis. 2. 1,2,3,4-tetrahydroisoquinoline-7-sulfonanilides.** Journal of Medicinal Chemistry. 23(8):837-840, 1980.

1,2,3,4-Tetrahydroisoquinoline-7-sulfonanilides related to 1,2,3,4-tetrahydroisoquinoline-7-sulfonamide (THIQs) were prepared and studied for their ability to inhibit phenylethanolamine N-methyltransferase (PNMT) in vitro. The choice of substituents on the 7-phenyl group of the sulfonanilides was based on the Topliss approach to structure/activity relationship studies. Information about the importance of an acidic hydrogen atom on the sulfonamide nitrogen atom was obtained from the preparation and testing of a tertiary N-methylsulfonanilide. Other THIQ's containing sulfur substituents in the seven position were prepared and tested and consisted of 7-N-benzyl and 7-N-phenethyl derivatives of SK&F 29661 and 7-(phenacylthio)-and 7-(phenacylsulfonyl)-THIQ. The two most potent inhibitors were the 7-p-bromo- and p-chlorosulfonanilides. However, neither was an effective inhibitor of norepinephrine to epinephrine conversion when tested in an in vivo mouse assay at unit doses of 25mg/kg or 100mg/kg. 17 references. (Author abstract modified)

001070 Chermat, R.; Simon, P.; Boissier, J. R. Simon: Dept. de Pharmacologie, Faculte de Medecine Pitie-Salpetriere, F-75634 Paris Cedex 13, France **Amoxapine in experimental psychopharmacology: a neuroleptic or an antidepressant?** Arzneimittel-Forschung. 29(5):814-820, 1979.

Behavioral and pharmacological studies of the neuroleptic and antidepressant properties of 2-chloro-11-(piperazinyl)dibenz(b,f)(1,4)-oxazepine (amoxapine) are described. Many of its effects are similar to those of neuroleptics: sedation, decrease in motor activity, catalepsy, transitory suppression of avoidance reaction, antagonisms of amphetamine-induced toxicity in crowded mice and inhibition of stereotyped behavior induced by amphetamine in rats and antagonisms to various effects of apomorphine. At similar doses, amoxapine also shows effects atypical for a neuroleptic, but which are relatively characteristic of antidepressants: antagonism of prochlorperazine-induced catalepsy in rats, inhibition of reserpine-induced hypothermia in mice and enhancement of yohimbine toxicity in mice. The possibilities for therapeutic effects in humans are not great. 25 references. (Author abstract modified)

001071 Fink, Max; Irwin, Peter. Dept. of Psychiatry and Behavioral Science, Health Sciences Center, State University of New York, Stony Brook, NY 11790 **EEG and behavioral profile of flutroline (CP-36,584), a novel antipsychotic drug.** Psychopharmacology. 72(1):67-71, 1980.

The EEG and behavioral profile of flutroline (CP-36,584), a novel antipsychotic drug, were investigated. The pharmacologic profile of flutroline, a tetrahydro-gamma-carboline compound, predicts an antipsychotic compound with greater potency and longer duration than established clinical antipsychotic compounds. In normal male volunteers, it elicited EEG, behavioral, and plasma prolactin release profiles similar to established antipsychotic compounds. Peak occurred in 4 to 5 hr.; but the clinical activity projected from these studies is one-fifth that of haloperidol. In relation to the available clinical findings, the pharmaco/EEG data are better predictors of the clinical activity of flutroline than its preclinical profile. 14 references. (Author abstract modified)

001072 Frances, Henriette; Chermat, Raymond; Simon, Pierre. Dept. de Pharmacologie, Faculte de Medecine Pitie-Salpetriere, 91, Bld de l'Hopital, F-75634 Paris Cedex 13, France **Oxotremorine behavioural effects as a screening test in mice.** Progress in Neuro-Psychopharmacology. 4(3):241-246, 1980.

The utility of oxotremorine-induced behavioral effects in mice as a screening test in psychopharmacological research was evaluated. The effects of neurotransmitter agonists and antagonists on oxotremorine-induced behavioral effects was investigated. Anticholinergic drugs reduced the following behavioral effects of oxotremorine: hypothermia, akinesia, tremors, and peripheral symptoms. Serotoninergic and beta-adrenergic stimulants antagonized only hypothermia, modifying neither tremors nor peripheral symptoms. Muscle relaxants and postsynaptic alpha-adrenergic antagonists reduced tremors, but modified neither hypothermia nor peripheral symptoms. 8 references. (Author abstract modified)

001073 Heinze, William J.; Schlemmer, R. Francis, Jr.; Williams, E. Ann; Davis, John M. Dept. of Research, Illinois State Psychiatric Institute, Chicago, IL **The acute and chronic effect of 5-methoxytryptamine on selected members of a primate social colony.** Biological Psychiatry. 15(6):829-839, 1980.

The acute and chronic effect of 5-methoxytryptamine (5-MeOT), a structural analogue of known tryptamine hallucinogens and a substance found in mammalian brain, on nonhuman primate behavior was studied in a social colony of four stumptail macaques. In the first study, dose-dependent behavioral changes induced by 5-MeOT were determined with the administration of seven acute doses to each animal. At higher doses, 10 to 20mg/kg, 5-MeOT induced two abnormal or emergent behaviors, body shakes and limb jerks. 5-MeOT also induced a dose-dependent reduction in normal social and solitary behavior of treated animals, suggesting that this drug has sedative proper-

ties. The second study examined the effects of once daily administration of 5-MeOT, 10mg/kg, for 5 days. During this time tolerance developed to both 5-MeOT-induced body shakes and limb jerks, but failed to develop to the reduction in social and solitary behaviors. Since body shakes and limb jerks are behaviors characteristically induced in this species by hallucinogens, these results suggest that 5-MeOT may possess hallucinogenic properties. However, this effect may be weak and may only occur after large doses, since large doses of 5-MeOT were required to induce a relatively small number of body shakes and limb jerks in monkeys when compared to potent hallucinogens such as lysergic acid diethylamide or 5-methoxy N,N-dimethyltryptamine. 13 references. (Author abstract)

001074 Hester, Jackson B., Jr.; Rudzik, Allan D.; VonVoigtlander, Philip F. Research Laboratories, Upjohn Co., Kalamazoo, MI 49001 **1-(Aminoalkyl)-6-aryl 4H-s-triazolo(4,3-a)(1,4) benzodiazepines with antianxiety and antidepressant activity.** Journal of Medicinal Chemistry. 23(4):392-402, 1980.

A series of 1-(aminoalkyl)-6-aryl-4H-s-triazolo(4,3-a)(1,4)benzodiazepines was prepared and evaluated for CNS activity. Members of this series showed activity in pharmacological tests designed to detect anxiolytic and antidepressant activity. Each type of activity could be varied independently by appropriate substituent selections. 28 references. (Author abstract modified)

001075 Hester, Jackson B., Jr.; Rudzik, Allan D.; VonVoigtlander, Philip. Research Laboratories, Upjohn Co., Kalamazoo, MI 49001 **2,4-Dihydro-6-phenyl-1H-s-triazolo(4,3-a)(1,4) benzodiazepin-1-ones with antianxiety and antidepressant activity.** Journal of Medicinal Chemistry. 23(4):402-405, 1980.

A series of 2,4-dihydro-6-phenyl-1H-s-triazolo(4,3-a)(1,4)benzodiazepin-1-ones was prepared and evaluated for CNS activity. The 2-methyl substituted analogues were active in tests for anxiolytic agents, whereas N-2-substitution with omega-(dialkylamino)alkyl substituents gave compounds with antidepressant potential as well as antianxiety activity. 16 references. (Author abstact modified)

001076 Hester, Jackson B., Jr.; Von Voigtlander, Philip; Evenson, Gerald N. Research Laboratories, Upjohn Company, Kalamazoo, MI 49001 **6-(Substituted-amino) 4H-s-triazolo(4,3-a)(1,4) benzodiazepines and 4-(substituted-amino) 6H-s-triazolo(4,3-a)(1,4) benzodiazepines with potential antianxiety activity.** Journal of Medicinal Chemistry. 23(8):873-877, 1980.

A series of 6-(substituted-amino)-4H-s-triazolo(4,3-a)(1,4)benzodiazepines was prepared for pharmacological evaluations, and, because of an interesting chemical isomerization, a similar series of 4-(substituted-amino)-6H-s-triazolo(4,3-a)(1,4)benzodiazepines was also obtained. Pharmacological evaluation of these compounds demonstrated that 8-chloro-1-methyl-6-piperidino-4H-s-triazolo(4,3-a)(1,4)benzodiazepine had interesting activity in tests useful for detecting antianxiety activity, while the corresponding 4-piperidino derivative had little activity in these tests. A brief discussion of a possible mechanism for the isomerization is also included. 14 references. (Author abstract)

001077 Juorio, A. V.; Davis, B. A.; Boulton, A. A. Psychiatric Research Division, University Hospital, Saskatoon, Saskatchewan S7N OXO, Canada **The effect of phenelzine and some of its para-halogenated derivatives on the levels of brain tyramine and octopamine in the mouse.** Research Communications in Psychology, Psychiatry and Behavior. 5(3):255-264, 1980.

The concentrations of p-tyramine (pTA) and m-tyramine (mTA) in the mouse striatum were measured following subcutaneous injection of phenelzine (PH), p-chloro-PH (pcPH), and p-fluor-PH (pfPH). Mouse hypothalamic levels of m- and p-isomers of octopamine (mOa pOA) were also analyzed. Endogenous concentrations of pTA and mTA and pOA and mOA were 20.4, 7, 9, and 1.3 ng/g, respectively. Administration of PH produced a three to sixfold increase in the concentrations of both isomers of TA and OA. The increases produced by pcPH were similar but not greater than those produced by PH itself. These results show that the substitution of chlorine or fluorine in the para position of PH does not increase its monoamine oxidase inhibiting properties, but may render it less potent. 16 references. (Author abstract modified)

001078 Komulainen, Hannu; Tuomisto, Jouko; Airaksinen, Mauno M.; Kari, Ilkka; Peura, Pekka; Pollari, Liisa. Dept. of Pharmacology, University of Kuopio, P.O.B. 138, SF-70101 Kuopio 10, Finland **Tetrahydro-beta-carbolines and corresponding tryptamines: in vitro inhibition of serotonin, dopamine and noradrenaline uptake in rat brain synaptosomes.** Acta Pharmacologica et Toxicologica. 46(4):299-307, 1980.

The structure/activity relationships of tryptolines, other beta-carbolines, and tryptamines as inhibitors of monoamine uptake were studied in male Wistar rat brain synaptosomes. All beta-carbolines inhibited 5-hydroxytryptamine (5-HT) uptake to a greater degree than dopamine (DA) or noradrenaline (NA) uptake. The most potent tryptoline derivative was 6-hydroxy-tetrahydro-beta-carboline. Tetra-beta-carboline was more potent than tetrahydroharmane or norharmane. All were weaker than the freely-rotating indoleamines N-methyl-tryptamine (N-Me-T) and 5-HT as inhibitors of 5-HT uptake; N-Me-T and 5-HT were also more potent than most beta-carbolines as inhibitors of DA and NA uptake. Results suggest that tetrahydro-beta-carbolines may inhibit 5-HT uptake in vivo but probably do not affect catecholamine uptake. 45 references. (Author abstract modified)

001079 Krogsgaard-Larsen, Povl; Jacobsen, Poul; Brehm, Lotte; Larsen, Jens-Jorgen; Schaumburg, Kjeld. Royal Danish School of Pharmacy, Dept. of Chemistry BC, Universitetsparken 2, DK-2100 Copenhagen, Denmark **GABA agonists and uptake inhibitors designed as agents with irreversible actions.** European Journal of Medicinal Chemistry. 15(6):529-535, 1980.

Isoguvacine oxide, guvacine oxide, and the hydrobromides of (3RS,4RS)-4-mercaptopiperidine-3-carboxylic acid and (3RS,4SR)-4-mercaptopiperidine-3-carboxylic acid were synthesized and tested for potency as GABA agonists and uptake inhibitors in rat brain synaptosomes in vitro. Isoguvacine oxide was a potent GABA agonist and appeared to interact with GABA receptors in a reversible manner. Guvacine oxide and (3RS,4RS)-4-mercaptopiperidine-3-carboxylic acid interacted selectively with the neuronal GABA system, but were less effective than (3RS,4SR)-4-hydroxynipecotic acid and guvacine; (3RS,4SR)-4-mercaptopiperidine-3-carboxylic acid was inactive in both test systems. 39 references. (Author abstract modified)

001080 Lederer, Edgar. Laboratoire de Biochimie, C.N.R.S., F-91190 Gif-sur-Yvette, France **Synthetic immunostimulants derived from the bacterial cell wall.** Journal of Medicinal Chemistry. 23(8):819-825, 1980.

Research studies concerning synthetic immunostimulants derived from the bacterial cell wall are reviewed. Two categories of compounds derived from the bacterial cell wall are emphasized: 1) synthetic peptidoglycan derivatives such as muramyldipeptide (MDP); and 2) trehalose esters (cord factors) and their lower, synthetic analogues. It is noted that some of these compounds may be candidates for important antibacterial, anticancer, and antiparasitic application. Structure/activity aspects of these substances rather than the detailed immunological

events they influence are emphasized. It is suggested that nonspecific antibacterial actions of MDP (or its derivatives and combinations) may be useful in stimulation of nonspecific resistance to immunodepressive responses. 110 references.

001081 Li, Choh Hao; Tseng, Liang-Fu; Ferrara, Pascual; Yamashiro, Donald. Hormone Research Laboratory, University of California, San Francisco, CA 94143 **Beta-endorphin: dissociation of receptor binding activity from analgesic potency.** Proceedings of the National Academy of Sciences of the United States. 77(4):2303-2304, 1980.

The biological activities of four synthetic analogs of camel beta-endorphin with extension at the carboxyl terminus and human beta-endorphin were measured by the radioreceptor binding assay using (Tyr27-3H) human beta-endorphin as the primary ligand and by the tail flick test for analgesic potency. Results indicate a clear dissociation of radioreceptor binding activity from analgesic potency. It is concluded that receptor binding activity of opioid peptides is not a satisfactory indication of analgesic potency. 15 references. (Author abstract modified)

001082 Martorana, P. A.; Heucke, U.; Nitz, R.-E. Pharmakologische Abt., Cassella AG, Hanauer Landstr. 526, D-6000 Frankfurt/Main 61, West Germany **The new antidepressant pirlindole: antagonism of acute overdosage in the mouse.** Arzneimittel-Forschung. 29(6):950-952, 1979.

The new antidepressant 2,3,3a,4,5,6-hexahydro-8-methyl-1H-pyrazino(3,2,1-j,k) carbazole hydrochloride (pirlindole), a novel compound with both norepinephrine reuptake and monoaminooxidase inhibitory properties, was tested in mice. Acute overdosage in mice resulted in clonic convulsions and death. The dose response curves were parallel and all Ss who died showed convulsions prior to death. To investigate an effect upon the pirlindole-induced toxicity, various drugs were injected i.p. 30 min prior to a convulsive dose or a lethal dose of pirlindole. Diazepam and phenobarbital were active against convulsions and lethality. Trimethadione was effective against mortality but not against convulsions. A few Ss were protected from both effects by clonidine and against mortality by diphenylhydantoine and cyproheptadine. Chlorpromazine, propranolol, and phenoxybenzamine were inactive. Diazepam, phenobarbital, and trimethadione were also effective against lethality when injected 10 min after pirlindole. (Journal abstract modified)

001083 Perrissin, Monique; Luu Duc, Cuong; Narcisse, Guy; Bakri-Logeais, Francoise; Huguet, Francois. UER des Sciences Pharmaceutiques et Biologiques de Grenoble, Domaine de la Merci, F-38700 La Tronche, France **/Synthesis and pharmacology of 2-amino-3-ethoxycarbonyl-4-phenylthiophene derivatives./** Synthese et pharmacologie des derives de l'amino-2 ethoxycarbonyl-3 phenyl-4 thiophene. European Journal of Medicinal Chemistry. 15(6):563-565, 1980.

A series of 2-amino-3-ethoxycarbonyl-4-phenylthiophene derivatives was synthesized and tested for pharmacological activity in male Swiss mice. The compounds showed weak antiinflammatory and more clearcut analgesic activity. They were centrally acting minor sedatives. 10 references. (Journal abstract modified)

001084 Peterson, D. W.; Maitai, C. K.; Sparber, S. B. Sparber: Dept. of Psychiatry, University of Minnesota, Medical School, Minneapolis, MN 55455 **Relative potencies of two phenylalkylamines found in the abused plant Catha edulis, khat.** Life Sciences. 27(22):2143-2147, 1980.

The relative potencies of two phenylalkylamines found in the abused plant Catha edulis (khat), cathinone and d-norpseudoephedrine were compared in rats performing an operant behavioral procedure. Both compounds suppress fixed-ratio 20 responding for food in a dose-related manner. Cathinone is seven to ten times more potent and has a more rapid onset of action than d-norpseudoephedrine, although the duration of action of cathinone is shorter. The ability of these two compounds to produce amphetamine-like stereotyped movements is similar to this relative potency and duration of action. Comparison of the behavioral effects in rats with the pattern of stimulation reported for khat use by humans suggests that cathinone may be the major CNS active component of Catha edulis. 11 references. (Author abstract modified)

001085 Poignant, J. C. Departement de Neuro-psychopharmacologie, I.N.R.S., 3, rue de la Republique, F-92150 Suresnes, France **/Pharmacology of the Survector./** Pharmacologie du Survector. Psychologie Medicale. 11(A):29-48, 1979.

Animal pharmacological studies which have defined the profile of activity and the site and mechanism of neurochemical action of survector are described. Results of the following investigations are reported: study of motor exploration, the relationship between dosage and activity, drug interactions, comparison of amineptine with various dopamine agonists, changes in neurotransmitters and the study of the site of action in the mesolimbic system. (Journal abstract)

001086 Revusky, Sam; Taukulis, Harald K.; Coombes, Shannon. Memorial University of Newfoundland, St. John's, Newfoundland A1B 3X9, Canada **Dependence of the Avfail effect on the sequence of training operations.** Behavioral and Neural Biology. 29(4):430-445, 1980.

The effects the sequence of training operations have on the Avfail effect were examined with male Wistar rats. The Avfail effect refers to the fact that pentobarbital loses its capacity to produce a mild flavor aversion if pairings in which pentobarbital is injected prior to lithium precede pairings of consumption of saccharin solution with pentobarbital. The Avfail effect is not obtained if the sequence of these two types of pairings is reversed. Under extremely sensitive conditions, the reversed sequences seem to produce a very weak effect opposite in direction from Avfail and in the same direction as sensory preconditioning. 13 references. (Author abstract modified)

001087 Schutzenberger, W. G.; Kolassa, N.; Wiener, H.; Kraupp, O.; Tuisl, E. Kolassa: Pharmakologisches Institut, Universitat Wien, Wahringer Str. 13a, A-1090 Vienna, Austria **Pharmacological properties of taglutimide, a new sedative-hypnotic drug.** Arzneimittel-Forschung. 29(8):1146-1150, 1979.

The pharmacological properties of taglutimide (2-(bicyclo(2,2,1)heptane-2-endo-3-endo-dicarboxyimido)-glutarimide), a new sedative/hypnotic drug, were investigated. It did not produce any toxic effects when administered orally to mice even at a very high dosage. CNS depression was demonstrated by a reduction in spontaneous motor activity, potentiation of the central depressant effect of pentobarbital, antagonism of the central stimulant effect of amphetamine after oral administration and by narcotic activity after i.v. administration of the drug. Oral administration of taglutimide, K-2003, potentiated the analgesic action of morphine without being effective on its own. Only weak potentiation of chlorpromazine-induced catalepsy, but not of reserpine-induced catelepsy, was observed after taglutimide pretreatment. The drug influenced neither motor coordination nor the toxicity of ethanol. Taglutimide exhibited no anticonvulsant activity with respect to maximum electroshock or strychnine-induced seizures. No effect on heart-rate or blood pressure was demonstrable after taglutimide treatment in conscious dogs. 21 references. (Journal abstract modified)

001088 Silverman, Richard B.; Hoffman, Stephen J. Dept. of Chemistry, Northwestern University, Evanston, IL 60201 **Mechanism of inactivation of mitochondrial monoamine oxidase by N-cyclopropyl-N-arylalkyl amines.** In: Kalman, Drug action and design: mechanism-based enzyme inhibitors. Amsterdam, Elsevier North Holland, 1979. (p.175-186).

A proposed mechanism of inactivation of mitochondrial monoamine oxidase (MAO) by N-cyclopropyl-N-arylalkyl amines is described. This mechanism of inactivation of mitochondrial MAO by N-cyclopropyl-N-arylalkyl amines is a suicide inactivation in which these compounds are oxidized by the enzyme to highly electrophilic cyclopropanone imines, which then form weak covalent bonds with the coenzyme or protein. The possibility that labile adducts such as the N-cyclopropyl-N-arylalkyl amines can hypothetically act as fail-safe drugs, and eliminate the hypertensive crisis faced by patients taking MAO inhibitors who ingest high tyramine containing foods is discussed. 7 references.

001089 Smith, R. G.; Lucas, R. A.; Wasley, J. W. F. Lucas: Research Dept., Pharmaceuticals Division, CIBA-GEIGY Corp., Summit, NJ 07901 **Synthesis and anxiolytic activity of a series of pyrazino(1,2-a)(1,4)benzodiazepine derivatives.** Journal of Medicinal Chemistry. 23(8):952-955, 1980.

The synthesis and biological evaluation for anxiolytic and antidepressant activity of some derivatives of pyrazino(1,2-a)(1,4)benzodiazepine are described. As part of a continuing search for a compound which has both anxiolytic and antidepressant properties, certain 7-substituted compounds were studied. These structures combine features of the antidepressant mianserin and the benzodiazepine anxiolytic diazepam. Significant levels of anxiolytic activity were noted for 7-(o-chlorophenyl)-9-chloro-1,2,3,4,4a,5-hexahydro-3-methylpyrazino (1,2-a)(1,4)benzodiazepine. 10 references. (Author abstract modified)

001090 Vadrot, M.; Scharbach, H.; Raynaud, G.; Loo, H.; Dachary, J. M.; Boutillier, H.; Boulenger, J. P. Centre de Recherche Delalande, 10, rue des Carrieres, F-92500 Rueil-Malmaison, France /Cesium./ Le cesium. Encephale. 5(4):359-374, 1979.

The psychopharmacological characteristics of cesium are discussed. Cesium is an alkaline metal close to rubidium, which is being studied in psychopharmacology for use as a possible antidepressant. Cesium stimulates motor activity in animals and antagonizes some sedative substances, but it does not modify either self-stimulating behavior or induced aggressiveness. Given in large doses, cesium presents hypertensive effects connected with stimulation of adrenal epinephrine secretion. At the synaptic level, cesium increases neurotransmitter release. However, norepinephrine turnover is not modified in the central nervous system, while that of serotonin is increased, as are the cerebral concentrations of tryptophan, serotonin, and 5-hydroxyindole acetic acid. These very fragmentary data about the toxicopharmacological properties of cesium, as well as the very prolonged half-life of this ion (from 50 to 100 days), explain why cesium, unlike rubidium, still has not been used in man. 72 references. (Journal abstract modified)

001091 Wallach, Marshall B.; Alps, Brian J.; Roszkowski, A. Peter; Waterbury, L. David. Dept. of Pharmacology, Syntex Research, 3401 Hillview Ave., Palo Alto, CA 94304 **The neuro- and cardiovascular pharmacology of RS-51324, a potential antidepressant.** Progress in Neuro-Psychopharmacology. 4(6):569-584, 1980.

The pharmacological properties of a potential new antidepressant, DL-4(5)-(2,6-dichlorophenyl)-2-methoxycarbonyl amino-4,5-dihydroimidazole (RS-51324), were studied in animals. The compound antagonized the effects of reserpine in male Sprague-Dawley rats and enhanced the effects of L-DOPA in male ICR mice, demonstrating its antidepressant activity. RS-51324 inhibited norepinephrine uptake, but did not alter monoamine oxidase activity. The drug-potentiated peripheral vascular responses to serotonin showed mild antihistaminic activity, and potentiated the tyramine-induced pressor response. It showed no anticholinergic cardiovascular effects or centrally mediated skeletal muscle relaxant activity. The median lethal dose was greater than 2g/kg. Results suggest that RS-51324 is a membrane pump-inhibiting compound with probable antidepressant activity. 35 references. (Author abstract modified)

001092 Welch, Willard M.; Ewing, Frank E.; Harbert, Charles A.; Weissman, Albert; Koe, B. Kenneth. Dept. of Medicinal Chemistry, Pfizer Central Research Labs., Groton, CT 06340 **4a,9b-trans-8-Fluoro-5-(4-fluorophenyl) 2-(4-(4-fluorophenyl)-4-hydroxybutyl)-2,3,4,4a,5,9b hexahydro-1H-pyrido(4,3-b)indole hydrochloride, a new potent neuroleptic.** Journal of Medicinal Chemistry. 23(8):949-952, 1980.

Preparation and testing for antipsychotic activity are described for two racemic diastereoisomers and four optically active enantiomers of the compound 4a,9b-trans-8-fluoro-5-(4-fluorophenyl)-2-(4-(4-fluorophenyl) 4-hydroxybutyl)-2,3,4,4a,5,9b-hexahydro 1H-pyrido(4,3-b)indole hydrochloride. Results from both in vitro and in vivo tests for antipsychotic activity indicate that both racemic diastereoisomers and two of four chiral enantiomers are potent and long-acting neuroleptic compounds. 15 references. (Author abstract modified)

001093 Wright, William B., Jr.; Greenblatt, Eugene N.; Day, Ivana P.; Quinones, Nicanor Q.; Hardy, Robert A., Jr. American Cyanamid Co., Lederle Laboratories, Cardiovascular-CNS Disease Research Section, Pearl River, New York, NY 10965 **Derivatives of 11-(1-piperazinyl) 5H-pyrrolo(2,1-c)(1,4)benzodiazepine as central nervous system agents.** Journal of Medicinal Chemistry. 23(4):462-465, 1980.

Four 11-(1-piperazinyl)-5H-pyrrolo(2,1-c)(1,4)benzodiazepines were prepared and evaluated as CNS agents. All showed psychotropic activity in animal tests. One compound, 11-(1-piperazinyl)-5H-pyrrolo(2,1-c)(1,4)benzodiazepine was active as an antidepressant (against tetrabenazine depression in mice) and as a neuroleptic (against amphetamine lethality in grouped mice). 7 references. (Author abstract modified)

001094 Zakusov, V. V. Institute of Pharmacology, Academy of Medical Sciences of Russia, Moscow, USSR **Neuropharmacological and neurochemical approaches to preclinical evaluation of neuroleptics.** Advances in Biochemical Psychopharmacology. 24:295-303, 1980.

Neuropharmacological and neurochemical approaches to preclinical evaluation of neuroleptics are discussed, and the utility of studies on impulse summation in the CNS is described. It is contended that the phenomenon of impulse summation (discovered by I. M. Sechenov in 1863) is an objective and precise parameter for assessment of the functional state of the CNS under the influence of neurotropic drugs. Impulse summation in the CNS is judged suitable for the study of tolerance to neurotropic drugs during chronic administration. Preclinical electrophysiological studies of the mechanisms of action of various neurotropic drugs are described. 2 references.

03 MECHANISM OF ACTION: PHYSIOLOGICAL, BIOCHEMICAL AND PHARMACOLOGICAL

001095 Ader, J. P.; Sebens, J. B.; Korf, J. Dept. of Biological Psychiatry, Psychiatric University Clinic, Oostersingel 59, 9713 EZ Groningen, The Netherlands **Central levels of noradrenaline,**

3-methoxy-4-hydroxyphenylethyleneglycol and cyclic AMP in the rat after activation of locus coeruleus neurons: influence of single and repeated neuroleptic treatment. Psychopharmacology. 70(3):239-245, 1980.

The influence of single and repeated neuroleptic treatment on noradrenaline (NA) metabolism in two areas of the CNS with different neuronal organization (forebrain and spinal cord) was studied. The endogenous levels of 3-methoxy-4-hydroxyphenylethyleneglycol (MOPEG) in the forebrain and spinal cord of the rat were markedly increased by single i.p. doses of clozapine, haloperidol, or chlorpromazine. Unilateral electrical stimulation of the locus coeruleus (LC) after a single dose of either clozapine or haloperidol induced smaller reductions of hippocampal NA (ipsilateral vs. contralateral) than in saline-treated control animals. Results indicate: 1) that neuroleptics decrease NA by release of the amine from a rapidly releasable pool; 2) that even when the influence of subchronic neuroleptic treatment on cerebral NA metabolism has ceased, such treatment has a lasting influence on NA neurons; and 3) that in vivo the formation of cyclic AMP is not influenced by neuroleptic treatment. 43 references. (Author abstract modified)

001096 Agnati, L. F.; Andersson, K.; Fuxe, K.; Benfenati, F.; Cortelli, P.; D'Alessandro, R.; Ogren, S. -O. Dept. of Human Physiology, University of Bologna, Bologna, Italy **Effects of chronic treatment with l-sulpiride and haloperidol on central dopamine turnover evaluated in dopamine cell body and nerve terminal-rich areas.** Advances in Biochemical Psychopharmacology. 24:75-80, 1980.

The effects of chronic treatment with l-sulpiride and haloperidol on central dopamine (DA) turnover were evaluated in dopamine cell body and nerve terminal rich areas. Forty-eight hours following a 2-week treatment period, behavioral supersensitivity to DA agonists was demonstrated. No changes in DA turnover were found in the DA cell body groups A9 and A10 or in various DA terminals of forebrain, with a possible exception for the diffuse type of DA terminals in the tuberculum olfactorium where a reduction of DA turnover rate was observed. In the median eminence of the l-sulpiride-treated group, however, DA turnover increases were observed. It is suggested that the lack of amine turnover changes in most of the DA terminal systems of the brain is related to the development of DA receptor supersensitivity in both striatal and limbic areas, balancing the DA receptor blocking activity of the neuroleptic drugs still present in brain tissue. 12 references. (Author abstract modified)

001097 Aguilar, Jose S.; Criado, Manuel; De Robertis, Eduardo. Instituto de Biologia Celular, Facultad de Medicina, Universidad de Buenos Aires, 1121 Buenos Aires, Argentina **Inhibition by local anesthetics, phentolamine and propranolol of (3H)quinuclydinyl benzylate binding to central muscarinic receptors.** European Journal of Pharmacology. 68(3):317-326, 1980.

The specific binding of tritiated quinuclydinyl benzylate (3H-QNB) to crude synaptosomal membranes from cat cerebral cortex revealed a single binding site with a dissociation constant of 0.25nM, Hill number 0.89, and maximum binding capacity of 114pmol/g protein. Binding was inhibited by the local anesthetics procaine, tetracaine, and dibucaine and by the adrenergic antagonists phentolamine and propanolol. The effect of the local anesthetics and adrenergic antagonists was reversible, and these drugs did not protect the muscarinic receptor from the deleterious effect of Triton-X-100. Results suggest that local anesthetics inhibit 3H-QNB binding to the muscarinic receptor by acting at some accessory site rather than on the true receptor site. 23 references. (Author abstract modified)

001098 Ahtee, Liisa; Attila, L. M. J. Dept. of Pharmacy, Division of Pharmacology, University of Helsinki, SF-00170 Helsinki 17, Finland **Opioid mechanisms in regulation of cerebral monoamines in vivo.** Advances in Biochemical Psychopharmacology. 25:361-365, 1980.

To investigate the role of the opiate receptors and their endogenous ligands in the regulation of cerebral monoamine synthesis and release, male Wistar rats were treated chronically with morphine or methadone for 3 or 8 weeks. The rate of alpha-methyl-p-tyrosine (alpha-MT) induced depletion of limbic and striatal dopamine, the striatal homovanillic acid, and the whole brain serotonin and 5-hydroxyindoleacetic acid concentrations were determined. Some of the rats were challenged with a single dose of morphine or methadone to study the development of tolerance. Results suggest that the endogenous opioid mechanisms which are weakened by chronic administration of narcotic analgesics are involved in the regulation of synthesis and release of dopamine and serotonin. Results also indicate that chronic treatment of rats with narcotic analgesics more readily alters the function of their cerebral dopamine neurons than that of serotonin neurons. 9 references.

001099 Aksamit, Robert R.; Falk, Werner; Leonard, Edward J. Laboratory of General and Comparative Biochemistry, NIMH, Bethesda, MD 20205 **Chemotaxis by mouse macrophage cell lines. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 37 p.

Five mouse macrophage cell lines were tested for chemotaxis and phagocytosis. All five cell lines ingested sheep red cells coated with rabbit IgG anti-Forssman antibody and exhibited chemotaxis to endotoxin-activated mouse serum (EAMS) and lymphocyte-derived chemotactic factor. Two cell lines were tested for chemotaxis to f-Met-Leu-Phe and neither responded. Four of the cell lines (RAW264, RAW309CR, PU5-1R, and WR19M.1) exhibited chemotaxis to C5a. These cell lines displayed a 2-hour lag before migrating toward EAMS, and chemotaxis was dependent upon cell density. When fewer than 1000 cells were present per square mm of filter surface, less than 10% of the cells migrated; however, at a density of 5000 cells per square mm 50 to 70% of the cells migrated. WEHI-3 differed from the other cell lines in that there was no chemotaxis to C5a, migration toward EAMS did not have a detectable lag and there was no cell density dependence for chemotaxis. Comparison of these chemotactic properties with those reported in the literature for mouse macrophages and monocytes suggests that RAW264, RAW309CR, PU5-1R, and WR19M.1 have properties that are similar to those of mouse resident macrophages, while WEHI-3 may have some of the properties of mouse monocytes. 28 references. (Author abstract)

001100 Aksamit, Robert R.; Falk, Werner; Cantoni, Giulio L. Laboratory of General and Comparative Biochemistry, NIMH, Bethesda, MD 20205 **Inhibition of chemotaxis by S-3-deazaadenosylhomocysteine in a mouse macrophage cell line. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 27 p.

Data are presented which show that 3-deazaadenosine inhibits chemotaxis in mouse macrophage cell line RAW264, but not in RAW309CR. In vivo, both cell lines accumulate AdoHcy in response to 3-deazaadenosine, but only RAW264, a cell line sensitive to inhibition of chemotaxis by 3-deazaadenosine, accumulates 3-deaza-AdoHcy. In vitro, the AdoHcy hydrolase of both cell lines is inhibited by 3-deazaadenosine, but only the AdoHcy hydrolase of RAW264 utilizes 3-deazaadenosine as a substrate for the synthesis of 3-deaza-AdoHcy. It is concluded that inhibition of chemotaxis is a result of the accumulation of 3-deaza-AdoHcy. 29 references.

001101 Alam, A. S.; Hagerman, L. M.; Imondi, A. R. Adria Laboratories Inc., Research Park, P.O. Box 16529, Columbus, OH 43216 **Bioavailability of sulpiride tablet and capsule in dogs.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):180-189, 1980.

In vitro dissolution rates were not accurate predictors of bioavailability for five formulations of sulpiride, a benzamide derivative used to treat schizophrenia. The times required for 50% dissolution ranged from 1.5 to 30 minutes in simulated gastric fluid and from 4 to 228 minutes in simulated intestinal fluid. No correlation was obtained between in vitro dissolution rate and overall bioavailability in dogs, as measured by the amounts of unchanged sulpiride excreted in urine. Total unchanged sulpiride excreted in urine over 48 hours ranged from 30 to 44% of the dose, with urinary half-lives of 3.9 to 4.9 hours. 13 references. (Author abstract modified)

001102 Alander, Ture; Anden, Nils-Erik; Grabowska-Anden, Maria. Anden: Dept. of Medical Pharmacology, Box 573, Biomedicum, S-751 23 Uppsala, Sweden **Metoclopramide and sulpiride as selective blocking agents of pre- and postsynaptic dopamine receptors.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(2):145-150, 1980.

The effects of sulpiride and metoclopramide on presynaptic and postsynaptic dopamine receptors were investigated in the rat brain as antagonisms of the apomorphine-induced inhibition of the dopamine synthesis in the absence of nerve impulses and as blockade of the apomorphine-induced rotation following unilateral inactivation of the corpus striatum, respectively. Sulpiride was more potent in blocking postsynaptic than presynaptic dopamine receptors whereas the reverse was found for metoclopramide. The synthesis and the utilization of dopamine was stimulated by sulpiride and metoclopramide and was inhibited by atrophine, prazosine, and aminooxyacetic acid. The inhibitory effects of the latter three drugs were counteracted by metoclopramide, but not by sulpiride. This difference can be explained by the preferential action of metoclopramide on presynaptic dopamine receptors. Following unilateral inactivation of the corpus striatum, metoclopramide at a low dose, but not sulpiride turned the rats ipsilaterally, indicating that the release of dopamine was facilitated and that the presynaptic dopamine receptors are of physiological significance. 36 references. (Author abstract)

001103 Algeri, S.; Consolazione, A.; Plaznik, A. Istituto di Ricerche Farmacologiche Mario Negri, Via Eritrea 62, 20157 Milan, Italy **Increased metabolism of dopamine and serotonin induced in forebrain areas by etorphine microinjection in periaqueductal gray.** European Journal of Pharmacology. 68(3):383-384, 1980.

Microinjection of 0.125mcg etorphine into the periaqueductal gray region of the midbrain of male CD-COBS rats resulted in catatonia and increases in the concentration of dopamine and serotonin metabolites in striatal and limbic areas. These effects did not appear to be due to the direct interaction of etorphine with opioid receptors in these regions. It is suggested that the etorphine-induced increase in forebrain dopamine turnover is mediated by dorsal raphe neurons. 5 references.

001104 Allan, R. D.; Evans, R. H.; Johnston, G. A. R. Dept. of Pharmacology, University of Sydney, NSW 2006, Australia **Gamma-aminobutyric acid agonists: an in vitro comparison between depression of spinal synaptic activity and depolarization of spinal root fibres in the rat.** British Journal of Pharmacology. 70(4):609-615, 1980.

In ventral roots of hemisected spinal cord preparations from 3 to 9-day-old rats, the relative potencies of GABA agonists in depolarizing the isolated spinal roots were not paralleled by their potencies in depressing spontaneous synaptic activity. Even though both effects were sensitive to antagonism by bicuculline, depolarization and depression appeared to be mediated by different types of receptor. The depolarizing potencies of agonists were strongly correlated with data reported for displacement of labeled GABA from rat brain membranes in vitro, but relative depressant potencies showed no such correlation. 28 references. (Author abstract modified)

001105 Altura, Burton M.; Gebrewold, Asefa; Lassoff, Samuel. Dept. of Physiology, SUNY, Downstate Medical Center, Brooklyn, NY 11203 **Biphasic responsiveness of rat pial arterioles to dopamine: direct observations on the microcirculation.** British Journal of Pharmacology. 69(4):543-544, 1980.

The effects of local perivascular application of dopamine to Wistar rat pial arterioles were studied, using a high-resolution, closed-circuit television microscope recording system. Local application of 1 to 10pg dopamine to pial arterioles-induced vasodilatation, whereas higher doses induced vasoconstriction. Results support the theory that local release of dopamine from perivascular cells in the brain promotes local increases in cerebral blood flow. 6 references. (Author abstract modified)

001106 Angel, A.; Gratton, Denise A.; Halsey, M. J.; Wardley-Smith, Bridget. Dept. of Physiology, The University, Sheffield, S10 2TN, England **Pressure reversal of the effect of urethane on the evoked somatosensory cortical response in the rat.** British Journal of Pharmacology. 70(2):241-247, 1980.

Urethane induced a dose-related increase in latency and decrease in the amplitude of the initial components of the cerebral response evoked by stimulation of the forepaw in female Sprague-Dawley rats. These changes were reversed when ambient pressure was increased with helium and the electrocorticogram showed an increase in basic frequency. The dose of urethane required to prevent reflex response to tail stimulation increased as pressure increased. 10 references. (Author abstract modified)

001107 Angelucci, L.; Valeri, P.; Palmery, M.; Patacchioli, F. Institute of Pharmacology and Pharmacognosy, University of Roma, Roma, Italy **Long-term effect of neuroleptics on corticosterone septo-hippocampal uptake in rats.** Advances in Biochemical Psychopharmacology. 24:407-417, 1980.

The long-term effect of neuroleptics on corticosterone septo-hippocampal uptake was studied in rats. Results indicate: 1) that corticosterone (B) independent actions of neuroleptics on B receptors in the hippocampus (H), septum (S), and hypophysis (Hy), revealed in changes in specific B uptake, are likely to cooperate in determination of the hypophyseo/adrenal activation by the same drugs in the intact animal; 2) that modulation of B receptor capacity in these areas by circulating hormone is a determinant of the net resultant activation of hypophyseo/adrenal secretion by neuroleptics; 3) that chlorpromazine (CPZ) and haloperidol (HAL) affect B specific uptake in brain in different ways, but not in the Hy; 4) that the result of direct and indirect actions of neuroleptics on specific B uptake is subject to sensitization, tolerance, and/or inversion during long-term treatment; and 5) that CPZ and HAL effects on hypophyseo/adrenal response are mediated by interference with alpha-noradrenergic or dopaminergic function, depending on the area involved. 31 references.

001108 Ary, Marylouise; Lomax, Peter. Div. of Biology, Beckman Laboratory of Behavioral Biology, California Institute of Technology, Pasadena, CA 91125 **Influence of narcotic agents on temperature regulation.** Advances in Biochemical Psychopharmacology. 20:429-451, 1979.

The effects of narcotic analgesics on body temperature are reviewed, and brain sites involved in the thermoregulatory effects of morphine are described. Behavioral studies of thermoregulatory mechanisms and the neurotransmitters involved in temperature effects of narcotics are discussed. The use of temperature as a model for studying the mechanisms of opiate dependence is illustrated by two examples, changes in responsiveness to dopamine hypothermia in morphine-dependent rats and the reinitiation of withdrawal hypothermia in exaddict rats. 58 references.

001109 Aubineau, Pierre; Sercombe, Richard; Seylaz, Jacques. Dept. de Physiologie et de Physiopathologie Cerebrovasculaire, CNRS, ERA 361, Paris, France **Parasympathomimetic influence of carbachol on local cerebral blood flow in the rabbit by a direct vasodilator action and an inhibition of the sympathetic-mediated vasoconstriction.** British Journal of Pharmacology. 68(3):449-459, 1980.

The direct and indirect parasympathomimetic effects of carbachol on local cerebral blood flow were studied in the rabbit caudate nucleus. After blockade of nicotinic synapses in the superior cervical ganglion by local injection of hexamethonium, infusions of carbachol (0.5, 1.3, and 2.5mcg/kg/minute) induced mean increases in caudate blood flow of 8, 17, and 37%, respectively. The dilator effect of the largest dose of carbachol was abolished by 1 to 1.5mg/kg atropine. The 2.5mcg/kg/minute carbachol infusion also diminished (by more than 50%) the reduction in caudate blood flow induced by postganglionic stimulation of the cervical sympathetic chain, but did not affect the reduction of blood flow induced by i.v. infusion of noradrenaline. The inhibition of the adrenergic (sympathetic) system by carbachol was not modified by high doses of atropine. 37 references. (Author abstract modified)

001110 Audigier, Y.; Mazarguil, H.; Rossier, J.; Cros, J. Laboratoire de Pharmacologie et de Toxicologie Fondamentales du CNRS 205, route de Narbonne, F-31078 Toulouse Cedex, France **Met-enkephalin(Arg6,Phe7) interacts with the kappa-receptors on guinea-pig ileum.** European Journal of Pharmacology. 68(2):237-238, 1980.

The interaction of met-enkephalin(Arg6,Phe7) with opiate receptors in guinea-pig ileum was studied. The antagonist potency of naloxone against met-enkephalin(Arg6,Phe7) was compared to that against met-enkephalin, which interacts preferentially with mu-receptors, and ketocyclazocine, a selective kappa-receptor agonist. Results indicate that met-enkephalin(Arg6-Phe7) interacts with kappa-receptors. 5 references.

001111 Axelson, John F. Tulane University **The effects of progesterone on the circadian and estrous cycles in the rat. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2373-B, 1980. Ann Arbor, Univ. Microfilms No. 8028491, 140p., 1980.

The effects of progesterone on circadian and estrous cycles of Sherman female rats maintained in a 12 to 12 light/dark cycle were examined during a 24-day period. Vaginal cycles were measured in similarly treated animals. Ovariectomized animals were tested for changes in estrogen's ability to induce sexual receptivity during a 24-day exposure to progesterone. Progesterone treatment reliably inhibited estrous activity cycles, sexual behavior, and vaginal cyclicity. While exposed to capsules of progesterone, animals failed to recover their estrous cycles or behaviors. Upon removal of the capsules, cylicity and sexual behavior rapidly reappeared. Results failed to replicate findings that animals recovered estrous activity cycles during exposure to a long-term treatment of progesterone. The lack of recovery of both sexual and vaginal cyclicity indicates that long-term progesterone treatment that inhibited estrous activity was effective in lowering other sexual behaviors and probably eliminated peripheral tissue cyclicity. (Journal abstract modified)

001112 Bacopoulos, Nicholas G.; Ware, Patricia L. Dept. of Pharmacology, Dartmouth Medical School, Hanover, NH 03755 **Dopamine receptors in rat frontal cortex: pharmacological properties in vivo and in vitro.** Life Sciences. 27(25&26):2489-2494, 1980.

The pharmacologic specificity of 3H-spiroperidol and 3H-apomorphine binding and the in vivo effects of neuroleptics were investigated in rat caudate nucleus and frontal cortex. The acute in vivo administration of several neuroleptic drugs drastically increased the content of dopamine metabolites in the caudate nucleus and frontal cortex of rats. In homogenates of the above brain regions, the same neuroleptics were potent antagonists of stereospecific 3H-spiroperidol binding, with minor differences in regional potency. Apomorphine was a significantly more potent inhibitor of 3H-spiroperidol binding in the caudate nucleus. Serotonin was more potent than dopamine in the frontal cortex and the reverse was true in the caudate nucleus. In both regions, dopamine was 200 to 300 times more potent in displacing 3H-apomorphine binding than was serotonin. 21 references. (Author abstract modified)

001113 Bagchi, Sakti P.; Smith, Thomas M.; Bagchi, Preeti. Rockland Research Institute, Orangeburg, NY 10962 **Divergent reserpine effects on amfonelic acid and amphetamine stimulation of synaptosomal dopamine formation from phenylalanine.** Biochemical Pharmacology. 29(21):2957-2962, 1980.

Some effects of a nonamphetamine central stimulant, amfonelic acid, on the synaptosomal (P2) formation and release of dopamine being produced continuously from (14C)phenylalanine substrate were investigated, and the modification by reserpine of the effects of amfonelic acid and amphetamine was examined. Results show that amfonelic acid, like amphetamine, may release continuously forming synaptosomal dopamine and stimulate dopamine synthesis. However, the synthesis stimulation by amfonelic acid, but not that by amphetamine, may be abolished by reserpine action, either in vitro or in vivo. Results suggest that, although amphetamine may stimulate by releasing the newly forming dopamine pool, a significant amfonelic acid action may be on the catecholamine storage system, and synaptosomal dopamine synthesis may be under the controlling influence of both the newly forming amine and the vesicular stores. 23 references. (Author abstract modified)

001114 Baldessarini, Ross J.; Kula, Nora S.; Arana, George W.; Neumeyer, John L.; Law, Say-Jong. Mailman Research Center, McLean Division of Massachusetts General Hospital, Belmont, MA 02178 **Chloroethylnorapomorphine, a proposed long-acting dopamine antagonist: interactions with dopamine receptors of mammalian forebrain in vitro.** European Journal of Pharmacology. 67(1):105-110, 1980.

Preincubation with N-chloroethylnorapomorphine (NCA) blocked the stimulation of cyclic AMP synthesis by 50mcM dopamine (DA) in Sprague-Dawley rat striatal homogenates. The 10-0-methylated (11-monophenolic) analog of NCA was weaker, and an 0,0'-diester was inactive. The inhibition induced by NCA was counteracted by DA or apomorphine, but not by norepinephrine. NCA also competed for binding of 3H-apomorphine to subsynaptosomal calf caudate membranes with greater potency than the monophenolic or diester analogs. 10 references. (Author abstract modified)

001115 Balfour, D. J. K. Dept. of Pharmacology and Therapeutics, University Medical School, Ninewells Hospital, Dundee, Scotland **Studies on the biochemical and behavioural ef-**

fects of oral nicotine. Archives Internationales de Pharmacodynamie et de Therapie. 245(1):95-103, 1980.

A series of studies on the biochemical and behavioral effects of oral nicotine is described. The acute intragastric and chronic oral administration of nicotine had no effect on plasma corticosterone levels although both procedures induced tolerance to the stimulatory effects of acute subcutaneous nicotine on corticosterone secretion. Chronic oral nicotine also had little effect on brain 5-hydroxyindoles and no changes in plasma corticosterone or brain 5-hydroxyindoles were seen in response to nicotine withdrawal. Oral nicotine was not an adequate substitute in rats made behaviorally dependent upon nicotine injections. It is concluded that route of administration greatly influences the biochemical and behavioral properties of nicotine. 15 references. (Author abstract modified)

001116 Balfour, David J. K. Dept. of Pharmacology and Therapeutics, University Medical School, Ninewells Hospital, Dundee, Scotland **Effects of GABA and diazepam on 3H-serotonin release from hippocampal synaptosomes.** European Journal of Pharmacology. 68(1):11-16, 1980.

GABA and diazepam each increased the spontaneous release of tritiated 5-hydroxytryptamine (3H-5-HT) from preloaded male Wistar rat hippocampal synaptosomes, but blocked the calcium-dependent, potassium-evoked release of 3H-5-HT. Diazepam antagonized the GABA-mediated increase in spontaneous release of 3H-5-HT, but enhanced the inhibitory effect of GABA on potassium-stimulated release. Results suggest that hippocampal 5-HT release is controlled presynaptically by GABA and that diazepam may selectively enhance the inhibitory effect of GABA on evoked release of 5-HT. 18 references. (Author abstract modified)

001117 Bannon, Michael J.; Bunney, Edward B.; Zigun, Jeffrey R.; Skirboll. Lana R.; Roth, Robert H. Roth: Dept. of Pharmacology, Yale University School of Medicine, New Haven, CT 06510 **Presynaptic dopamine receptors: insensitivity to kainic acid and the development of supersensitivity following chronic haloperidol.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(2):161-165, 1980.

The effects of kainic acid lesions and chronic haloperidol treatment on rat striatal dopaminergic presynaptic receptors were studied. Following the gamma-butyrolactone-induced inhibition of dopaminergic impulse flow, and after dopa decarboxylase inhibition, dopa accumulation and its reversal by dopamine agonists was measured in vivo. 3H-Apomorphine (a dopamine receptor ligand with purported presynaptic specificity) was used for in vitro binding experiments. Presynaptic dopamine receptors, as assessed by both methods, were unaffected by intrastriatal kainic acid injection 5 to 6 days before sacrifice. Seven days after termination of chronic haloperidol treatment, both an increased apomorphine response using the dopa accumulation method and an increase in 3H apomorphine binding were observed, indicating the development of presynaptic dopamine receptor supersensitivity. 34 references. (Author abstract)

001118 Bareis, Donna Lynn; Hirata, Fusao; Axelrod, Julius; Schiffmann, Elliott. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Phospholipid metabolism, calcium flux and the receptor mediated induction of chemotaxis in rabbit neutrophils. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 29p.

Rabbit neutrophils were stimulated with the chemotactic peptide fMet-Leu-Phe in the presence of the methyltransferase inhibitors homocysteine (HCYS) and 3-deazaadenosine (3-DZA). HCYS and 3-DZA inhibited chemotaxis, phospholipid methylation and protein carboxymethylation in a dose-dependent manner. The chemotactic peptide stimulated release of (14C)arachidonic acid previously incorporated into phospholipid was also blocked by the methyltransferase inhibitors. Stimulation by fMet-Leu-Phe or the calcium ionophore A23187 caused release of arachidonic acid but not of previously incorporated (14C)-labeled linoleic, oleic, or stearic acids. Unlike the arachidonic acid release caused by fMet-Leu-Phe, release stimulated by the ionophore could not be inhibited by HCYS and 3-DZA, suggesting the release was by a different mechanism or by stimulating a step after methylation in the pathway from receptor activation to arachidonic acid release. Calcium was absolutely required for arachidonic acid release, and methyltransferase inhibitors were found to partially inhibit chemotactic peptide-stimulated calcium influx. These results suggest that methylation pathways are involved in linking the chemotactic peptide receptor to stimulation of calcium influx which, in turn, activates a phospholipase A2 specific for cleaving arachidonic acid from phospholipids. 56 references. (Author abstract)

001119 Bartholini, G.; Scatton, B.; Zivkovic, B. Research Dept., Synthelabo (L.E.R.S.), F-75013 Paris, France **Effect of the new gamma-aminobutyric acid agonist SL 76 002 on striatal acetylcholine: relation to neuroleptic-induced extrapyramidal alterations.** Advances in Biochemical Psychopharmacology. 24:207-213, 1980.

The effects of the new GABA agonist SL 76 002 on striatal acetylcholine are described and discussed in relation to neuroleptic-induced extrapyramidal alterations in rat brain. A single injection of SL 76 002 reduced the activity of striatal cholinergic neurons and potentiated haloperidol-induced catalepsy and antagonized apomorphine-induced stereotypies. Repeated coadministration of haloperidol and S1 76 002 for 10 days does not affect the tolerance of the cholinergic system observed after administration of haloperidol alone. In contrast, coadministration of the two drugs results in a marked prevention of the tolerance to the cataleptogenic action of haloperidol and of the increased sensitivity to apomorphine. It is suggested that: 1) GABA mimetic medication inhibits striatal cholinergic transmission by a direct action of acetylcholine cells; 2) behavioral effects resulting from alteration of dopaminergic transmission are not exclusively mediated by changes of cholinergic activity; 3) GABA affects striatal function both directly and indirectly; and 4) SL 76 002 possibly exerts a beneficial action in L-DOPA-induced abnormal movements in parkinsonian patients and neuroleptic-induced tardive dyskinesias. 12 references. (Author abstract modified)

001120 Baudry, Michel; Lynch, Gary. Department of Psychobiology, University of California, Irvine, CA 92717 **Regulation of hippocampal glutamate receptors: evidence for the involvement of a calcium-activated protease.** Proceedings of the National Academy of Science. 77(4):2298-2302, 1980.

The characteristics of the calcium-induced increase in (3H)glutamate binding in rat hippocampal membranes were analyzed, and it was found that both (3H)glutamate binding and calcium-stimulating effect are temperature sensitive and are inhibited by the thiol reagent N-ethylmaleimide as well as by various protease inhibitors. The effects of calcium on glutamate binding were found to be much more pronounced in some brain regions than others; cerebellar membranes were almost insensitive, whereas hippocampal and striatal membranes were highly sensitive. Taken together, these data suggest a possible cellular mechanism by which activity at hippocampal synapses might regulate the number of (3H) glutamate receptors and thus achieve long-lasting functional change. 31 references. (Author abstract modified)

001121 Becker, Jill; Ramirez, V. D. Dept. of Physiology and Biophysics, University of Illinois, Urbana, Il 61801 **Dynamics of**

endogenous catecholamine release from brain fragments of male and female rats. Neuroendocrinology. 31:18-25, 1980.

A continuous flow perfusion system was used to measure the in vitro release rate and percent release of endogenous norepinephrine (NE) and dopamine (DA) from rat brain fragments. Catecholamines (CA) were measured simultaneously in effluent fractions and in tissue fragments following perfusion using a modified radioenzymatic assay. DA release rate from the caudate nucleus (CN) in male rats was 30 times greater than from the medial basal hypothalamus (MBH). The percent of DA release was 2.5 times greater and there was a three times greater final tissue concentration of DA in the CN than in the MBH. The percent of NE release from the CN was close to four times greater than the percent release from the MBH, and final tissue concentrations of NE were 87.9pg/mg in the CN compared to 1240pg/mg in the MBH (postperfusion values). In a group of female rats, only the percent release of NE from the MBH was significantly different from that of similar tissue from male rats. However, the release rate and percent release of DA from the MBH of female rats were significantly lower than that of male rats. It appears that under this in vitro condition there are marked regional and sex differences in the metabolism of CA between the CN and the MBH fragments of male and female rats. Implications of these findings are briefly discussed. 25 references. (Author abstract modified)

001122 Beinfeld, Margery C.; Packman, Paul M. Laboratory of Clinical Science, Building 10, Room 3N309, NIMH, Bethesda, MD 20205 **Corticosterone increases the synthesis of a soluble protein in pituitary glands from adrenalectomized male rats which precipitates with anti-rat growth hormone antiserum. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 17 p.

Data are presented to show that treatment of adrenalectomized male rats with corticosterone induces the synthesis in their pituitary glands of a specific soluble protein with a subunit molecular weight of 24,000 on SDS-urea polyacrylamide gels. The induced protein was detected by the methods of double isotope incorporation and electrophoresis. Enhanced synthesis of this protein was observed 1, 3, and 6 hours after hormone treatment, with the maximal response 6 hours after hormone treatment. The possibility that the corticosterone-induced protein in rat pituitary glands is rat growth hormone (rGH) was investigated. When pituitary gland soluble protein containing the induced protein is mixed with a specific anti-rGH antiserum, the induced protein is quantitatively precipitated. The precipitation of the corticosterone-induced protein with anti-rGH antiserum is good evidence that in intact pituitary glands, like GH3 cells, corticosterone increases rGH synthesis. This corticosterone-induced protein in rat pituitary glands has the same molecular weight as newly-synthesized rGH in GH3 cells and in a cell free system utilizing RNA from bovine anterior pituitaries. 12 references. (Author abstract)

001123 Belyi, V. P. Lab. funktsional'noy neyrokhimii NII is. normal'noy fiziologii AMN SSSR, Moscow, USSR **/The effect of cortisol microionophoretic applications on the activity of hippocampal neurons in unrestrained rabbits./** Vliyaniye mikroionoforeticheskikh applikatsiy kortizola na aktivnost'neyronov gippokampa v opytakh na svobodnoperedvigayushchikhsya krolikakh. Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova. 66(3):325-332, 1980.

The reactions of 47 neurons of the dorsal hippocampus in nine unrestrained male rabbits in response to microionophoretic application of the hormone of the cortex of the adrenal glands, cortisol, were studied. In response to the administration of cortisol the majority of hormone-sensitive hippocampal neurons increased their firing rate. Apart from this, the hormone affected the distribution of interspike intervals. Neurons with a lower spontaneous firing rate revealed a tendency towards an increase in hormone sensitivity. Results corroborate the inhibitory role of the dorsal hippocampus in central mechanisms of regulation of the level of hypophyseal corticotropic activity by the corticoids. 20 references. (Journal abstract modified)

001124 Bennett, James P., Jr.; Snyder, Solomon H. Snyder: Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins School of Medicine, Baltimore, MD 21205 **Regulation of receptor binding interactions of 125I-angiotensin II and 125I-(sarcosine1,leucine8)angiotensin II, an angiotensin antagonist, by sodium ion.** European Journal of Pharmacology. 67(1):1-10, 1980.

Angiotensin receptor interactions with the angiotensin agonist 125I-angiotensin-II (125I-AII) and the antagonist 125I-(sarcosine1,leucine8)angiotensin-II (125I-Sar1,Leu8-AII) were differentially affected by sodium ion concentration. The binding of 125I-AII to calf cerebellar cortex and adrenal cortex increased 25 and 2.5 fold, respectively, when sodium ion concentration was increased from 10 to 150mM. In brain membranes, increases in sodium concentration accelerated the association and slowed the dissociation of 125I-AII. The binding of 125I-SarI,Leu8-AII to these tissues was much less sensitive to sodium ion concentration. The sodium-induced increase in 125I-AII binding to calf cerebellum was correlated with cationic size and was not an ionic strength effect. The sodium effect on angiotensin receptor binding was greater for peptides with aspartic acid at position one in the peptide structure. 26 references. (Author abstract modified)

001125 Bennett, James P., Jr.; Snyder, Solomon H. Snyder: Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Receptor binding interactions of the angiotensin II antagonist, 125I-(sarcosine1,leucine8)angiotensin II, with mammalian brain and peripheral tissues.** European Journal of Pharmacology. 67(1):11-25, 1980.

The binding of the angiotensin-II (AII) antagonist, sarcosine1,leucine8-angiotensin-II (Sar1,Leu8-AII), to calf cerebellar cortex, bovine adrenal cortex, and rabbit uterine membranes was saturable, reversible, and of high affinity. The peptide specifity of 1251-Sarl,Leu8-AII binding to these tissues was consistent with labeling of physiologically relevant angiotensin receptors. A study of the binding potencies of 28 angiotensin peptide analogues revealed significant correlations between peptide binding potencies at 125I-AII versus 125I-Sar1,Leu8-AII receptor sites. Characteristics of binding in the three tissues are described. 23 references. (Author abstract modified)

001126 Benzi, G.; Arrigoni, E.; Pastoris, O.; Raimondo, S.; Dossena, M.; Fulle, D.; Tumminello, M. C.; Villa, R. F. Institute of Pharmacology, Dept. of Science, University of Pavia, Pavia, Italy **Drug interference on some biochemical parameters of rat cerebral cortex during post-ischemic recovery.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):198-216, 1980.

The effects of vincamine, theophylline, dihydroergocristine and alanine on glycolytic metabolites, Krebs' cycle intermediates, related amino acids, and energy mediators were studied during total ischemia (5 minutes) and postischemic recovery (3, 15, and 30 minutes) in male Sprague-Dawley rats. Interrelated changes of intermediates of carbohydrate and amino acid metabolism were observed. Alanine perfusion induced a partial detour of the lactacid anaerobic process toward the succinate related alactacid cycle, leading to an increase in cortical GABA content. Vincamine and dihydroergocristine acted in the opposite

direction. Theophylline tended to increase lactate cerebral concentration during postischemic recovery. 34 references. (Author abstract modified)

001127 Besser, G. M.; Yeo, T.; Delitala, G.; Grossman, A. B. Dept. of Endocrinology, St. Bartholomew's Hospital, London, England **Alteration of prolactin secretion by centrally acting drugs.** Advances in Biochemical Psychopharmacology. 24:399-406, 1980.

Research on alteration of prolactin secretion by centrally-acting drugs is reviewed, and the mechanisms of action of several classes of drugs on prolactin secretion are discussed. Of the centrally-acting drugs which modify secretion of prolactin, only the animal or plant opiate agonists and the dopamine-depleting agents do so through neural mechanisms. The commonly-used dopamine-receptor-blocking drugs raise prolactin levels, not by any actions on neurons, but rather by a direct action on the pituitary cells; they prevent access of the physiological hypothalamic prolactin inhibiting factor dopamine to its receptors on the mammotrophs. Thus, it may be expected that the profile of activity of these drugs on mental function will not necessarily parallel precisely their prolacting secretagogue potency. Dopamine receptor agonists lower prolactin by a direct stimulation of pituitary dopamine receptors. Serotoninergic agonists raise prolactin only by actions on the neural mechanisms of the brain. 15 references.

001128 Bey, Philippe; Jung, Michel J.; Koch-Weser, Jan; Palfreyman, Michael G.; Sjoerdsma, Albert; Wagner, Joseph; Zraika, Monique. Centre de Recherche Merrell International, 16 rue d'Ankara, F-67084 Strasbourg-Cedex, France **Further studies on the inhibition of monoamine synthesis by monofluoromethyldopa.** British Journal of Pharmacology. 70(4):571-576, 1980.

Alpha-monofluoromethyldopa (MFMD), a potent and selective enzyme activated irreversible inhibitor of aromatic L-amino acid decarboxylase, produced a substantial and long-lasting decrease in the catecholamine content of male CD1 mouse brain, heart, and kidney. A single dose of MFMD reduced the 5-hydroxytryptamine concentration of mouse brain without altering tryptophan concentration. Brain (but not peripheral) noradrenaline was restored within 1 hour of i.p. injection of dopamine. 12 references. (Author abstract modified)

001129 Biggio, G.; Casu, M.; Klimek, V.; Gessa, G. L. Institute of Pharmacology, University of Cagliari, Cagliari, Italy **Dopamine synthesis: tolerance to haloperidol and supersensitivity to apomorphine depend on presynaptic receptors.** Advances in Biochemical Psychopharmacology. 24:17-22, 1980.

The location of dopamine (DA) receptors controlling regulation of DA synthesis is discussed in relation to the dependence on presynaptic receptors of tolerance to haloperidol and supersensitivity to apomorphine. It is contended that striatal DA synthesis is regulated independently from changes in the kinetics of TH. DA receptors controlling striatal DA synthesis are located in structures resistant to kainic acid lesions and decortication suggesting that they are situated on the DA neuron itself. Changes in the sensitivity of presynaptic receptors seem to be responsible for the tolerance that develops after chronic haloperidol treatment to haloperidol effect on DA synthesis, and for the supersensitivity to apomorphine effect on DA synthesis. It is therefore possible that after chronic haloperidol presynaptic DA receptors become supersensitive to DA itself, which is released by nerve terminals or by dendrites. 14 references.

001130 Birsel, S.; Szerb, J. C. Dept. of Physiology and Biophysics, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H7 **Factors influencing the release of labelled gamma-aminobutyric acid and acetylcholine evoked by electrical stimulation with alternating polarity from rat cortical slices.** Canadian Journal of Physiology and Pharmacology. 58(10):1158-1166, 1980.

Factors influencing the release of labelled GABA and ACh evoked by electrical stimulation with alternating polarity from rat cortical slices were investigated. Rat cortical slices were incubated with (3H)GABA and were superfused at either 32 degrees C or 37 degrees C. To release (3H)GABA, the slices were stimulated with 2ms pulses of alternating polarity at either 16 or 64Hz. For comparison, the release of (3H)ACh after incubation with (3H)choline, was followed under identical conditions. It is suggested that major differences in the release of (3H)GABA and (3H)ACh induced by low frequency stimulation, in the presence of Ca2, may be due to differences in the properties of voltage dependent Ca2 channels in the two types of terminals. 31 references. (Author abstract modified)

001131 Bischoff, S.; Bittiger, H.; Krauss, J. Research Dept., Pharmaceutical Div., K-125.10.14, Ciba-Geigy, CH-4002 Basel, Switzerland **In vivo (3H)spiperone binding to the rat hippocampal formation: involvement of dopamine receptors.** European Journal of Pharmacology. 68(3):305-315, 1980.

An in vivo (3H)spiperone radioreceptor assay was used to demonstrate the existence of dopamine (DA) receptors in the male Tif:RAIf rat hippocampus. Maximum binding of (3H)spiperone in hippocampus was smaller than in striatum and frontal cortex but larger than in cerebellum. In inhibition studies of (3H)spiperone binding, all neuroleptics tested were active in hippocampus as well as striatum. In contrast, serotonin antagonists were less potent in these two brain regions than in frontal cortex. Haloperidol and dipropyl-ATN were effective in hippocampus, striatum, and frontal cortex even when serotonin receptors were blocked. Results indicate that (3H)spiperone binds mainly to DA receptors in hippocampus and striatum, but to DA and serotonin receptors in frontal cortex. 45 references. (Author abstract modified)

001132 Blair, I. A.; Hensby, C. N.; MacDermot, J. Dept. of Clinical Pharmacology, Royal Postgraduate Medical School, Ducane Road, London W12 OHS, England **Prostacyclin-dependent activation of adenylate cyclase in a neuronal somatic cell hybrid: prostanoid structure-activity relationships.** British Journal of Pharmacology. 69(3):519-525, 1980.

Prostacyclin activated adenylate cyclase in the NCB-20 neuronal hybrid cell line. Guanosine-5'-triphosphate was required for activation of adenylate cyclase by 5,6,beta-dihydroprostacyclin, a stable analog of prostacyclin. Steady-state kinetic analysis of the activation of adenylate cyclase by the analog suggested a simple, noncooperative bimolecular interaction between the ligand and a single receptor population. Structure/activity relationships of selected prostanoids revealed certain functional requirements for activation of adenylate cyclase. 24 references. (Author abstract modified)

001133 Blanchard, Jean-Charles; Boireau, Alain; Garret, Claude; Julou, Louis. Rhone-Poulenc Recherches, Centre Nicolas Grillet, Vitry-sur-Seine, F-94400, France **The use of thioproperazine, a phenothiazine derivative, as a ligand for neuroleptic receptors -- I. In vitro studies.** Biochemical Pharmacology. 29(21):2933-2938, 1980.

The use of (3H)thioproperazine (a neuroleptic of the phenothiazine family) as a ligand for neuroleptic receptors has been studied in vitro in various brain regions of the rat. Specific thioproperazine binding has been observed in two regions rich in dopamine terminals: striatum and nucleus accumbens. No specific binding was observed in frontal cortex and hippocampus. Thioproperazine binds with affinity to rat microsomal striatal

fraction. In this fraction, the number of binding sites is rather similar to that found with haloperidol and spiperone, two neuroleptics of the butyrophenone type. Subcellular distributions of thioproperazine binding reveals a pattern similar to that of 5'-nucleotidase, a plasma membrane marker. This indicates that the receptor sites of (3H)thioproperazine are associated with membrane-like structures. Inhibition studies indicate that all neuroleptic compounds, belonging to different chemical families, are capable of displacing thioproperazine from its binding sites. The most potent drugs are spiperone, thioproperazine and pipotiazine. It is concluded that thioproperazine, a phenothiazine neuroleptic, can be used, like the butyrophenone derivatives haloperidol and spiperone, as a ligand for studying neuroleptic receptors. 18 references. (Author abstract modified)

001134 Blennow, G.; Folbergrova, J.; Nilsson, B.; Siesjo, B. K. Research Dept. 4, E-blocket, Uniersity Hospital, S-221 85 Lund, Sweden **Effects of bicuculline-induced seizures on cerebral metabolism and circulation of rats rendered hypoglycemic by starvation.** Annals of Neurology. 5(2):139-151, 1979.

To evaluate the effects of substrate deficiency on cerebral function, metabolism, and blood flow during seizures, rats were injected intravenously withr bicuculline following a 24 h period of starvation. During the course of seizures, blood glucose concentrations fell, and when they were reduced to below about 3 micromole/decagram, cerebral function, metabolism, and blood flow altered. Changes in function involved the transition of an EEG pattern of bursts and suppression into one of frequent or sparse single spikes. Oxygen consumption, which initially increased at least two fold, fell toward normal or subnormal values in the single spike period. Cortical blood flow was markedly reduced, and there was an attenuated response to carbon dioxide administration. Simultaneously, a small but clear fall was detected in the cerebral phosphorylation potential, and concentrations of glycolytic metabolites (including lactate) and citric acid cycle intermediates were reduced. The perturbation of cerebral energy state (and of levels of carbohydrate substrates and amino acids) was reversed by glucose administration; but since neither this procedure nor additional bicuculline injections could cause resumption of continuous seizure, results suggest that cellular substrate depletion may have given rise to a sustained disturbance of synaptic transmission. 34 references. (Author abstract modified)

001135 Blier, Pierre; de Montigny, Claude. Centre de Recherche en Sciences Neurologiques, Universite de Montreal, C.P. 6128, Succursale A, Montreal, Quebec, Canada H3C 3J7 **Effect of chronic tricyclic antidepressant treatment on the serotoninergic autoreceptor: a microiontophoretic study in the rat.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(2):123-128, 1980.

The response of dorsal raphe neurons of male Sprague-Dawley rats to i.v. injections of lysergic acid diethylamide (LSD, 4mcg/kg) and to microiontophoretic applications of LSD or 5-hydroxytryptamine (5-HT) were not altered by chronic pretreatment with tricyclic antidepressants. The mean firing rate of these neurons was not altered by treatment with imipramine (5mg/kg and 10mg/kg), iprindole (2.5mg/kg), desipramine (5mg/kg), or femoxetine (5mg/kg) daily for 14 days. Results suggest that chronic tricyclic antidepressant treatment does not alter the sensitivity of the 5-HT autoreceptor. 41 references. (Author abstract modified)

001136 Bloom, F. E.; Rogers, J.; Schulman, J. A.; Schultz, J.; Siggins, G. R. A. V. Davis Center for Behavioral Neurobiology, Salk Institute, La Jolla, CA 92037 **Inferential changes after chronic treatments with Li, DMI, or ethanol detected by electrophysiological correlates.** Psychopharmacology Bulletin. 16(4):19-20, 1980.

The chronic actions of desipramine (DMI), lithium chloride (Li), and alcohol were compared in electrophysiological and biochemical tests of the rat cerebellum. In general, electrophysiological and biochemical effects of chronic DMI and Li on norepinephrine (NE) responsivity and binding were opposite to the effects these same drugs produce by acute iontophoresis to single cells: DMI then potentiates, and Li antagonizes, noradrenergic responses. These results provide electrophysiological evidence for reciprocal adaptive changes in NE sensitivity after chronic treatment with antidepressant drugs. An electrophysiological model was also successful in revealing alcohol tolerance and withdrawal effects on the firing pattern of the Purkinje neurons. 6 references.

001137 Boireau, Alain; Blanchard, Jean-Charles; Garret, Claude; Julou, Louis. Rhone-Poulenc Recherches, Centre Nicolas Grillet, Vitry-sur-Seine, F-94400, France **The use of thioproperazine, a phenothiazine derivative, as a ligand for neuroleptic receptors -- II. In vivo studies.** Biochemical Pharmacology. 29(21):2939-2942, 1980.

In vivo binding of (3H)thioproperazine (a neuroleptic of the phenothiazine family) to dopamine receptors is reported. After the administration of a tracer dose of (3H)thioproperazine, this neuroleptic is preferentially accumulated in the dopaminergic areas of the brain. The accumulation of (3H)thioproperazine is prevented by prior administration of various doses of unlabeled thioproperazine in the striatum but not in the cerebellum; thus accumulation in the cerebellum is considered to be nonspecific binding. Neuroleptics of different chemical families, phenothiazines (thioproperazine, pipotiazine, prochlorperazine, and levomepromazine), butyrophenones (haloperidol, pipamperone) and a dibenzodiazepine (clozapine) are able to compete with (3H)thioproperazine. Moreover, the pharmacologically inactive D-isomer of levomepromazine is devoid of such activity. These findings indicate that the in vivo binding of (3H)thioproperazine is specific. It is concluded that thioproperazine is a suitable ligand for in vivo dopamine receptor studies as well as for in vitro studies. 11 references. (Author abstract modified)

001138 Bourn, W. M.; Reigel, C. E. Division of Pharmacology, School of Pharmacy, Northeast Louisiana University, Monroe, LA 71209 **Lack of influence of brain catecholamines on acute effects of barbiturates.** Pharmacology Biochemistry and Behavior. 13(5):733-735, 1980.

Rats with cerebral electrode implants were tested for sensitivity to EEG burst suppression by intravenously infused sodium methohexital following manipulation of brain catecholamine function. Although depletion of both norepinephrine (NE) and dopamine (DA) with 6-hydroxydopamine resulted in a slight increase in methohexital sensitivity (MHS), similar depletion with alpha-methyltyrosine did not alter MHS. In addition, desipramine, an agent which selectively blocks uptake of NE did not affect MHS. Results indicate that brain NE and DA exert little, if any, effect on brain responsiveness to the acute effect of barbiturates. 18 references. (Author abstract modified)

001139 Braestrup, Claus; Nielsen, Mogens; Krogsgaard-Larsen, Povl; Falch, Erik. A/S Ferrosan, Research Division, DK-2860 Soeborg, Denmark **Two or more conformations of benzodiazepine receptors depending on GABA receptors and other variables.** Advances in Biochemical Psychopharmacology. 21:301-312, 1980.

The relationship between benzodiazepine receptors and GABA receptors were investigated in rat brain preparations. Results indicate that a particular class of GABA receptors, with a particular receptor/effector coupling, as well as other varia-

bles, regulate the conformational states of at least some classes of benzodiazepine receptors. GABA agonists interact with the receptors involved in a stereoselective manner. Furthermore, the new GABA mimetic compound, piperidine-4-sulfonic acid, as well as some other GABA mimetics, are competitive antagonists or partial agonists to the GABA/benzodiazepine receptor complex. 40 references.

001140 Brase, David A. Dept. of Pharmacology, Eastern Virginia Medical School, Norfolk, VA 23501 **Roles of serotonin and gamma-aminobutyric acid in opioid effects.** Advances in Biochemical Psychopharmacology. 20:409-428, 1979.

The effects of narcotic drugs on serotonin (5-HT) and GABA mechanisms are reviewed. Data indicate that opiate-induced hypothermia and catalepsy in rats and increased intestinal motility in dogs may be mediated by an increase in 5-HT function. The role of 5-HT in analgesia, locomotor activation, and opiate tolerance and dependence is less firmly established. The interaction of opiates with GABA mechanisms has also been reported. 165 references.

001141 Breese, George R.; Cooper, Barrett R. Dept. of Psychiatry, University of North Carolina, Chapel Hill, NC 27514 **Interaction of biogenic amine systems in brain. (Unpublished paper).** Final Report, NIMH Grant R01-MH-25573, 1980. 8 p.

Measures of locomotor activity in circular activity cages, of stereotyped behavior, and of self-stimulation behavior were used to: 1) examine the involvement of noradrenergic fibers in self-stimulation; 2) investigate the action of serotonergic pathways on dopaminergic function; and 3) seek biochemical data concerning interactions among mediator systems. The data demonstrated that catecholamine containing fibers were necessary for the locomotor stimulant actions of d-amphetamine and methylphenidate. In particular, dopaminergic fibers were believed to be primarily responsible. However, some data suggest that noradrenergic fibers may have an inhibitory function. Several other pieces of evidence point to serotonergic fibers as having an inhibitory action on stimulant-induced locomotion. A dose of alpha-methyltyrosine, which did not alter self-stimulation of control rats or rats with brain norepinephrine reduced, caused a significant reduction in responding at both electrode placement sites in animals in which brain dopamine was depleted. In addition, further evidence was generated indicating the importance of dopaminergic pathways on the effects of d-amphetamine on self-stimulation. Results suggest that drugs can alter self-stimulation of a site in brain anatomically associated with noradrenergic neural pathways and a site primarily associated with dopaminergic pathway in a similar manner. Evidence suggests that disruption of dopaminergic fibers is primarily responsible for the pharmacological effects of d-amphetamine, reserpine, and alpha-methyltyrosine. 14 references.

001142 Brodie, M. E.; Laverty, R.; McQueen, E. G. MRC Toxicology Research Unit, University of Otago Medical School, P.O. Box 913, Dunedin, New Zealand **Noradrenaline release from slices of the thalamus of normal and morphine-dependent rats.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):135-138, 1980.

The potassium-induced stimulation of (3H)noradrenaline release from slices of rat thalamus was reduced by 42% by the in vitro addition of morphine. This effect was prevented by prior addition of naloxone to the medium. Stimulation-evoked overflow of tritium did not differ significantly in thalamic slices from normal and morphine dependent rats. Addition of naloxone 10 minutes before exposure to 20mM potassium significantly enhanced noradrenaline release from slices from dependent rats. Results suggest that the basic release mechanism may have adapted to the continuous presynaptic inhibition of release by morphine. 14 references. (Author abstract modified)

001143 Brown, D. A.; Constanti, A. Dept. of Pharmacology, School of Pharmacy, 29/39 Brunswick Square, London WC1N 1AX, England **Intracellular observations on the effects of muscarinic agonists on rat sympathetic neurones.** British Journal of Pharmacology. 70(4):593-608, 1980.

Responses of single neurons in isolated superior cervical ganglia of Wistar rats to muscarinic agonists were recorded with intracellular electrodes. The primary effect of muscarinic agonists was to alter the rectifying properties of the cell within the potential range -80 to -40mV. Muscarine and methylfurmethide both produced reversible membrane depolarization accompanied by a fall in input conductance, an increased tendency toward repetitive spike discharges, and no change in spike configuration. Divalent cations and tetraethylammonium had some muscarine-like effects. 20 references. (Author abstract modified)

001144 Brown, D. A.; Fatherazi, S.; Garthwaite, J.; White, R. D. Dept. of Pharmacology, School of Pharmacy, University of London, 29/39 Brunswick Square, London WC1N 1AX, England **Muscarinic receptors in rat sympathetic ganglia.** British Journal of Pharmacology. 70(4):577-592, 1980.

The extracellular air gap method was used to study the effect of muscarinic agonists on the isolated superior cervical ganglia of the Wistar rat. Median effective doses for agonists and inhibitory constant values for antagonists at ganglionic muscarinic receptors were similar to those obtained for ileal receptors. However, pilocarpine and certain other agonists were more effective at ganglionic receptors than ileal receptors. 67 references. (Author abstract modified)

001145 Brown, D. F.; Viles, J. M. Molecular, Cellular, Developmental Biology Program, Iowa State University, Ames, IA 50011 **Glucose oxidation in the ventromedial hypothalamus is not affected by insulin or ouabain but depressed by alloxan treatment.** Experimental Brain Research. 40(4):464-467, 1980.

To study the effects of ouabain or insulin or glucose oxidation in the ventromedial hypothalamus (VMH), an in vitro system for incubating hypothalamic tissue from mice was employed. Insulin is apparently not required for VMH glucose oxidation in vitro; ouabain does not prevent VMH glucose oxidation in vitro. These data suggest: 1) that the VMH does not exhibit a cotransport phenomenon of glucose with the Na/K pump mechanisms; and 2) that glucose oxidation in the VMH is not insulin dependent. Alloxan diabetes was induced to increase tissue insulin sensitivity. Comparison of glucose oxidation rates in alloxan diabetic VMH tissue and normal VMH tissue, supplemented only with saline, indicates a significant depression of glucose oxidation in the alloxan treated tissue. It is suggested that cell membranes in the VMH are altered by alloxan. 22 references. (Author abstract modified)

001146 Brown, Janet; Doxey, John C.; Handley, Sheila. Doxey: Reckitt and Colman Pharmaceutical Division, Dansom Lane, Hull, HU8 7DS, England **Effects of alpha-adrenoceptor agonists and antagonists and of antidepressant drugs on pre- and postsynaptic alpha-adrenoceptors.** European Journal of Pharmacology. 67(1):33-40, 1980.

The effects of antidepressant drugs on postsynaptic alpha-adrenoceptors in the rat anococcygeus muscle and on presynaptic alpha-adrenoceptors in the vas deferens were examined. Of the antidepressants examined, mianserin was the most potent antagonist at presynaptic alpha-adrenoceptors, followed by trazodone, amitriptyline and nortriptyline. Mianserin was about 200 times less potent than piperoxane as a presynaptic alpha-adreno-

ceptor antagoist; viloxazine and desipramine were inactive. With the exception of viloxazine, all the antidepressants showed postsynaptic alpha-adrenoceptor antagonist properties. The effects of alpha-adrenoceptor agonists and antagonists were also determined. 30 references. (Author abstract modified)

001147 Browning, M.; Baudry, M.; Bennett, W. F.; Lynch, G. Lynch: Department of Psychobiology, University of California, Irvine, CA 92717 **Change in pyruvate dehydrogenase activity influence pyruvate-supported calcium accumulation by brain mitochondria. (Unpublished paper).** Research Report, NIMH Grant 5R01-MH-19793, 1980. 27 p.

Evidence that calcium accumulation by rat brain mitochondria is tightly linked to pyruvate dehydrogenase (PDH) activity is presented. Dichloroacetate (DCA), a known inhibitor of PDH kinase, stimulates pyruvate-supported calcium accumulation and is half-maximally effective at a concentration close to those for its stimulation of PDH activity and inhibition of the phosphorylation of the 40,000 alpha-subunit of PDH. These observations combined with the fact that DCA has no effect on calcium accumulation supported by either succinate or adenosine triphosphate, suggest that DCA exerts its effects on mitochondrial calcium accumulation by activating PDH. The link between PDH activity and mitochondrial calcium transport is also suggested by the fact that both processes show similar dependence on pyruvate concentration. The results may provide a practical explanation for the effects of repetitive stimulation on synaptic physiology. Earlier findings can be integrated with the present results to form the hypothesis that repetitive stimulation, by altering the phosphorylation of the alpha-subunit, changes the activity of PDH and thereby influences calcium sequestration by the mitochondria in nerve terminals. 41 references.

001148 Brownstein, Michael J.; Russell, J.; Gainer, H. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Biosynthesis, axonal transport and release of posterior pituitary hormones. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 2 p.

35S-Cystein-labeled precursors of the vasopressin associated neurophysin (Np-VP) and oxytocin associated neurophysin (Np-OT) were isolated from the supraoptic nuclei of normal rats. Brattleboro rats, which have diabetes insipidus, are deficient in the Np-VP precursor. The rates of synthesis and processing of neurophysin precursors change in response to a variety of physiological manipulations. Trypsinization of both precursors resulted in the liberation of neurophysin-like molecules. Oxytocin and its neurophysin and vasopressin and its neurophysin seem to be synthesized from two separate macromolecular common precursors. It is proposed that these common precursors be called propressophysin (for Np-VP and VP) and prooxyphysin (for Np-OT and OT). Propressophysin has been shown to be a glycoprotein, and when it is processed it appears to give rise to one or more glycopeptides that are transported to and stored in the posterior pituitary. Prooxyphysin is not glycosylated. A third 20,000 molecular weight protein comprised of a neurophysin-like protein and of neurophysin-binding peptides has been detected. It is suggested that the hypothalamus/neurohypophysial tract is a model peptidergic system. (Author abstract modified)

001149 Broxterman, H. J.; Mos, J. Leiden University Medical Centre, Dept. of Pharmacology, Sylvius Laboratories, Wassenaarseweg 72, 2333 AL Leiden, The Netherlands **Dopamine hypoactivity measured by in vivo voltammetry.** European Journal of Pharmacology. 68(3):389-391, 1980.

The spontaneous release of dopamine in the striatum of male Wistar rats was reduced by repeated treatment with 1-hydroxy-3-amino-pyrrolidone-2 (HA-966). This reduction in dopamine release did not appear to be due to accumulation of HA-966 in the brain. Results of this in vivo voltammetric study indicate that HA-966 may provide a useful model for the study of dopamine hypoactivity syndromes. 5 references.

001150 Broxterman, H. J.; van Valkenburg, C. F. M.; Noach, E. L. Leiden University Medical Centre, Dept. of Pharmacology, Wassenaarseweg, 72, 2333 AL Leiden, The Netherlands **HA-966 effects on striatal dopamine metabolism: implications for dopamine compartmentalizaion.** Journal of Pharmacy and Pharmacology. 32(1):67-69, 1980.

In male Wistar rats injected with 1-hydroxy-3-aminopyrrolidone-2 (HA-966), striatal dopamine (DA) content showed a dose-dependent increase that peaked 1 hour after injection and returned to control values within 3 hours. HA-966 also enhanced the increase of striatal DA ion rats treated with pargyline, a monoamine oxidase inhibitor; striatal DA concentrations were higher after HA-966 and pargyline than after either drug alone. Striatal levels of 3-methoxytyramine (3-MT) were slightly decreased 1 hour after injection of pargyline and HA-966, but 3-MT and DA both increased 4 hours after the drug treatment. Results are discussed in relation to the proposed existence of three separate DA pools. 24 references.

001151 Buch, H. P.; Baldauf, J.; Wolff, I. Institut fur Pharmakologie und Toxikologie, Universitat des Saarlandes, D-6650 Hamburg/Saar, West Germany **/On the mechanism of a different drug distribution during convulsive seizure in comparison to anaesthesia./** Uber das Zustandekommen einer differenten Stoffverteilung wahrend des Krampfes im Vergleich zur Narkose. Arzneimittel-Forschung. 30(12):2117-2123, 1980.

The mechanisms of action of drug dosages causing anesthesia or convulsive seizures were compared. Three min after simultaneous i.v. administration of phenazone and pentetrazole or of phenazone and the convulsively active S-()-1-methyl-5-phenyl-5-propyl barbituric acid ()MPPB), respectively, phenazone concentrations in liver, spleen and fat tissues of rats were lower than those of control rats (receiving phenazone only). However, in brain tissue, phenazone concentration was higher than in control rats. The distribution pattern of ()MPPB between the tissues corresponds to that of phenazone after simultaneous administration of pentetrazole. In rats anesthetized by hexobarbital or by the anesthetically active R-(-)-1-methyl-5-phenyl-5-propyl barbituric acid ((-)MPPB), tissue distribution of phenazone is identical in control and experimental animals. The tissue distribution pattern of (-)MPPB corresponds to that of phenazone after simultaneous administration of hexobarbital. Following pretreatment with diazepam, reserpine, or phenoxybenzamine, the tissue distribution patterns of ()MPPB approached that of (-)MPPB. The distribution of (-)MPPB in the tissues corresponds to that of ()MPPB if the animals receive simultaneously pentetrazole or electroconvulsive shock. 15 references. (Author abstract modified)

001152 Buckholtz, Neil S. Dept. of Psychiatry and Behavioral Sciences, Medical University of South Carolina, Charleston, SC 29403 **Brain serotonin and 5-hydroxyindoleacetic acid concentrations and serotonin synthesis following tetrahydro-beta-carboline administration in mice.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(3):215-221, 1980.

The effects of various tetrahydro-beta-carboline (THBC) compounds on serotonin (5-HT) and 5-hydroxyindoleacetic acid (5-HIAA) levels and 5-HT synthesis were studied in female CF1 mice. The compounds significantly increased 5-HT concentrations and decreased 5-HIAA concentrations. A comparison of the effects of 6-methoxy-THBC with reference drugs indicated that the increased 5-HT level induced by 6-methoxy-THBC was primarily due to monoamine oxidase-A inhibiting properties,

whereas the decrease in 5-HIAA was due to monoamine oxidase-A inhibition and 5-HT uptake inhibition. The THBC compounds also decreased the formation of 5-hydroxytryptophan by inhibiting 5-HT uptake and monoamine oxidase. 43 references. (Author abstract modified)

001153 Bunney, Benjamin S.; Skirboll, Lana R.; Grace, Anthony A. Neuropsychopharmacology Research Unit, Yale University School of Medicine, New Haven, CT 06510 **Acute and chronic haloperidol treatment: effects on nigrostriatal dopaminergic system activity.** Advances in Biochemical Psychopharmacology. 24:267-273, 1980.

To further study the time course of the actions of antipsychotic drugs, the effects of haloperidol (HAL) both on dopamine (DA) neurons in the zona compacta of the substantia nigra and on spontaneously active cells in the caudate nucleus were investigated using electrophysiological techniques. Chronic neuroleptic treatment produced changes in caudate nucleus activity which are different from those seen in acutely treated animals. Chronic HAL treatment leads to marked shifts in the activity of various cell populations in the caudate nucleus. Chronic HAL treatment leads to DA receptor supersensitivity in animals in which HAL is still present as well as in animals in which HAL treatment had been discontinued for 1 week. Neither acute nor chronic antipsychotic drug administration appears to cause a blockade of DA-induced inhibition of spontaneously active caudate neurons, although such a blockade has been demonstrated in other parts of the brain. It is suggested that antipsychotic drugs may have a different mechanism of action in the caudate nucleus than those currently postulated. Clinical implications of these data are discussed. 18 references.

001154 Burch, Troie P.; Ticku, Maharaj K. Ticku: Div. of Molecular Pharmacology, University of Texas Health Science Center, 7703 Floyd Curl Dr., San Antonio, TX **Ethanol enhances (3H)diazepam binding at the benzodiazepine-GABA-receptor-ionophore complex.** European Journal of Pharmacology. 67(2/3):325-326, 1980.

Ethanol produced a dose-related enhancement of 3H-diazepam binding to male Sprague-Dawley rat brain membranes. The increase in binding was saturable, with maximal increases of 45 to 50% occurring at 50 to 100mM ethanol. Increases in 3H-diazepam binding induced by ethanol and the GABA agonist muscimol were additive. Results suggest that centrally-acting depressants like ethanol may exert some of the effects by acting via the benzodiazepine/GABA receptor complex. 4 references.

001155 Burgess, Susan K.; Tessel, Richard E. Dept. of Pharmacology and Toxicology, University of Kansas, Lawrence, KS 66044 **Epinephrine is released from hypothalamus by depolarizing agents and amphetamine.** Brain Research. 194(1):259-262, 1980.

Endogenous epinephrine (EPI) was released from male Sprague-Dawley rat minced hypothalamic tissue in vitro by veratridine and by elevated extracellular potassium. This release was similar to that observed for endogenous norepinephrine and dopamine and was consistent with an exocytotic process. D-amphetamine, an indirectly-acting sympathomimetic amine, also released EPI. 19 references.

001156 Burki, H. R. Research Institute Wander, Sandoz Research Unit, Wander Ltd., Berne, Switzerland **Adaptive changes of the striatal dopamine system induced by repeated administration of neuroleptics and ergot derivatives.** Advances in Biochemical Psychopharmacology. 24:65-68, 1980.

Adaptive changes of the striatal dopamine (DA) system induced by repeated administration of neuroleptics and ergot derivatives were investigated. It was hypothesized that since tardive dyskinesia may be a consequence of neuroleptic-induced DA receptor hypersensitivity, the ergot derivates, because of their dopaminergic action, may restore the hypersensitive DA receptors to a more normal state of sensitivity. Pretreatment of the rats with bromocriptine or with compound 29-712 caused a change in the sensitivity of the striatal DA system which was opposite to that induced by clothiapine; the increase in homovanillic acid elicited by haloperidol in rats pretreated with bromocriptine or 29-712 being significantly greater than in the control Ss. It is concluded that bromocriptine and 20-712 act on the striatal DA system by different mechanisms of action. 3H-Haloperidol radioreceptor studies indicate that bromocriptine possesses a high affinity for the DA receptors to which the neuroleptics clothiapine and haloperidol bind with high affinity. 9 references.

001157 Caccia, S.; Guiso, G.; Samanin, R.; Garattini, S. Garattini: Istituto di Ricerche Farmacologiche Mario Negri, Via Eritrea, I-62-20157, Milan, Italy **Species differences in clobazam metabolism and antileptazol effect.** Journal of Pharmacy and Pharmacology. 32(2):101-103, 1980.

The anticonvulsant activity of clobazam (10mg/kg i.p.) against leptazol lasted longer in male CD2 Swiss mice than in male CD Sprague-Dawley rats. Plasma and brain concentrations of the drug and its rate of disappearance were similar in the two species, but the metabolite N-demethylclobazam was present at higher concentrations and for a longer time in mice than in rats. 15 references. (Author abstract modified)

001158 Campbell, Alexander; Kula, Nora S.; Jeppsson, Bengt; Baldessarini, Ross J. Dept. of Psychiatry, Harvard Medical School, Mailman Research Center, Belmont, MA 02178 **Oral bioavailability of apomorphine in the rat with a portacaval venous anastomosis.** European Journal of Pharmacology. 67(1):139-142, 1980.

Orally-administered apomorphine produced stereotyped behavior in male Sprague-Dawley rats with portocaval venous anastomosis, but not in sham-operated rats. Brain and serum levels of apomorphine were highly correlated and corresponded with ratings of stereotypy. Apomorphine could not be detected in the tissues of intact rats given oral apomorphine, but shunted rats shown similar levels after oral or subcutaneous administration. Results suggest that a strong first pass hepatic metabolism may account for the low oral bioavailability of catechol-aporphines. 10 references. (Author abstract modified)

001159 Cardinali, D. P.; Ritta, M. N.; Fuentes, A. M.; Gimeno, M. F.; Gimeno, A. L. CEFAPRIN, V. de Obligado 2490, 1428 Buenos Aires, Argentina **Prostaglandin E release by rat medial basal hypothalamus in vitro. Inhibition by melatonin at submicromolar concentrations.** European Journal of Pharmacology. 67(1):151-153, 1980.

Submicromolar concentrations of melatonin depressed prostaglandin-E (PGE) release from male Wistar rat medial basal hypothalamus (MBH) in vitro. In micromolar concentrations, melatonin also impaired the increase in PGE release induced by addition of norepinephrine to MBH explants. Results suggest that melatonin is a physiological inhibitor of prostaglandin synthesis in MBH. 7 references. (Author abstract modified)

001160 Carraz, Gilbert. C.H.U. Grenoble, Domaine de la Merci, Chemin Duhamel, F-38700 La Tronche, France **/Anatomico-physiological and neurochemical study of the limbic system: effect of nomifensine./** Systeme limbique: etude anatomo-physiologique et neuro-chimique; influence de la nomifensine. Psychologie Medicale. 12(C):55-69, 1980.

The brain's limbic system is described, and results of experiments with nomifensine are reviewed. The anatomy and physiology of the limbic system, first described by Broca in 1878, is outlined, and its histological and physiological characteristics are reviewed. In lower animals this structure is responsible for olfactory sensations. The hippocampal formations are described and the 1936 experiments of Kluver and Bucy which demonstrated some of the nonolfactory functions of the hippocampus are discussed. Interrelationships between the limbic system, the amygdaloid nucleus and the pineal gland are discussed. Nomifensine has been shown to reinforce the hippocampal function. In experiments on rats, stereotaxic injections of nomifensine modify the hippocampal electric impulses; injection of chlorpromazine does not change the electric impulses but does cause a considerable increase in amount of homovanillic acid. However, injecting them together produces neither of these changes. 15 references.

001161 Carruba, Michele O.; Ricciardi, Sante; Negreanu, Joseph; Calogero, Marianna; Mantegazza, Paolo. Dept. of Pharmacology, School of Medicine, University of Milan, Via Vanvitelli 32, I-20129 Milan, Italy **Effects of lisuride on body temperature of rats and rabbits: relation to microsomal biotransformation and dopaminergic receptor stimulation.** Psychopharmacology. 70(3):223-229, 1980.

The effects of lisuride on body temperature of rats and rabbits were investigated. In rats, lisuride either systemically or intracerebroventricularly induced a dose-related hypothermia. This effect was selectively antagonized by blockade of dopamine (DA) receptors in the CNS but not by inhibition of catecholamine synthesis or blockage of serotoninergic receptors. Also a blocker of peripheral DA receptors failed to antagonize the hypothermic effect of lisuride in rats. Induction of rat liver microsomal drug-metabolizing enzymes by phenobarbital counteracted lisuride-induced hypothermia. In rabbits, lisuride induced a hyperthermic response which was sensitive to both pimozide and metergoline pretreatment. These findings indicate that stimulation of brain DA receptors involved in thermoregulation is responsible for the changes in body temperature induced by lisuride in rats and rabbits and that these effects are caused by the drug itself and do not require previous biotransformation into an active metabolite. 43 references. (Author abstract modified)

001162 Caruso, Thomas P.; Larson, Dennis L.; Portoghese, Philip S.; Takemori, A. E. Dept. of Pharmacology and Medicinal Chemistry, University of Minnesota, Minneapolis, MN 55455 **Isolation of selective 3H-chlornaltrexamine-bound complexes, possible opioid receptor components in brains of mice.** Life Sciences. 27(22):2063-2069, 1980.

The nonequilibrium narcotic antagonist, chlornaltrexamine (CNA) was used to bind selectively and covalently opioid specific sites on brain membrane preparations. Selective binding of (3H)CNA occurred with a saturation maximum of 185 fmol/mg protein. Bound (3H)CNA was extracted with Triton X-100, dialyzed against Brij 36T, precipitated with trichloroacetic acid, and chromatographed on an Ultrogel AcA 22 column. The elution profile suggests that this extract contains a minimum of four selective (3H)CNA complexes. At least two of these complexes migrate in a single large peak. Column calibration showed that this peak eluted at 590,000 daltons. One of these specific (3H)CNA complexes elutes at the elution volume of the column and is dialyzable. Finally, putative aggregate of these complexes elutes with the void volume. 11 references. (Author abstract)

001163 Cerrito, Franca; Raiteri, Maurizio. Raiteri: Istituto di Farmacologia e Farmacognosia, Via al Capo di S. Chiara 5, I-16146 Genova, Italy **Dopamine biosynthesis is regulated by the amine newly recaptured by dopaminergic nerve endings.** European Journal of Pharmacology. 68(4):465-470, 1980.

The synthesis of dopamine (DA) from labeled tyrosine in male Wistar rat striatal synapstosomes was inhibited by exogenous DA only when the amine was allowed to enter the nerve endings. Extracellular DA was almost inactive in the presence of the uptake blocker nomifensine. Findings were not consistent with the concept of feedback control of DA synthesis mediated through autoreceptors. It is suggested that dopamine synthesis is regulated through inhibition of tyrosine hydroxylase according to the classical end product concept, with the function of the end product being exerted primarily by the amine newly taken up by the nerve terminals. 20 references. (Author abstract modified)

001164 Chadwick, D.; Hallett, M.; Jenner, P.; Marsden, C. D. Dept. of Neurology, Walton Hospital, Rice Lane, Liverpool L9 1EA, England **Observations on chloralose-induced myoclonus in guinea-pigs.** British Journal of Pharmacology. 69(3):535-540, 1980.

Physiological, biochemical, and pharmacological features of alpha-chloralose-induced myoclonus in the guinea-pig were studied. Electromyogram (EMG) bursts in muscles jerking in chloralose-induced myoclonus were long and not time locked to cortical events recorded in the EEG. The efferent conduction velocity down the spinal cord of signals generating EMG bursts was fast, but the afferent conduction velocity up the cord for stimulus evoked jerks was slow. Alpha-chloralose did not consistently alter 5-hydroxytryptamine (5-HT) levels or turnover in any brain area. Pretreatment with drugs that increase brain 5-HT or antagonize the action of 5-HT did not markedly alter chloralose-induced myoclonus. It is concluded that chloralose-induced myoclonus is not similar to 5-HT sensitive reticular reflex myoclonus in humans. 16 references. (Author abstract modified)

001165 Chen, Raymond Cheng-An. Wayne State University **Interaction studies between narcotic analgesics, narcotic antagonists and ethanol: studies during acute and chronic treatment and withdrawal states in rats and mice. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1330-B, 1980. Ann Arbor, Univ. Microfilms No. 8022741, 183p., 1980.

Interactions between ethanol and narcotics were examined in rats and mice. The effects of narcotics on ethanol preference, lethality and narcosis due to ethanol, ethanol levels in blood and brain, and withdrawal during acute, chronic, and withdrawal states were examined; the effects of ethanol on withdrawal signs of morphine, lethality of narcotics, and morphine levels in blood and brain were also investigated. A single dose of narcotics, but not narcotic antagonists, produced a transient, dose-related suppression of ethanol consumption, but ethanol preference was increased during morphine withdrawal. Animals pretreated chronically with narcotics showed more susceptibility to ethanol-induced physical dependence relative to naive animals. Acute dose of ethanol suppressed morphine withdrawal signs, except hypothermia which was enhanced. Treatment with narcotics decreased the elimination rate of ethanol, while naloxone enhanced elimination. Ethanol produced no effect on elimination of morphine. Chronic pretreatment with narcotics significantly decreased ethanol-induced lethality; while chronic ethanol pretreatment increased the lethality due to narcotics. Suppression of ethanol consumption by narcotics is in part attributable to increased ethanol levels in blood and brain, which in turn may lead to interaction toxicity. Cross-tolerance and cross-dependence were established between ethanol and narcotics. (Journal abstract modified)

001166 Cheney, D. L.; Revuelta, A. V.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Marijuana and cholinergic dynamics. (Unpublished paper).** Washington, DC, NIMH, 1980. 7 p.

Data are presented to show that the central cholinergic system must certainly be involved in a number of the actions of the tetrahydrocannabinols (THC). It appears that delta9-THC may reduce the turnover rate of acetylcholine (TRACh) in the nerve terminals of the cholinergic septohippocampal pathway by modifying the activity of GABAergic receptors. Cannabidiol, a nonpsychoactive THC analog, has no effect on the hippocampal TRACh at 100 times the minimal active dose of delta9-THC. It is possible that the inhibition of hippocampal cholinergic mechanisms plays a role in the psychotomimetic activity of delta9-THC. Such a role for the hippocampal cholinergic system would be consistent with studies that have implicated both the hippocampus and the cholinergic system in many complex behavioral functions. Structural analogs of delta9-THC reduce the hippocampal TRACh in a dose-dependent manner. The enhanced effectiveness of the dimethyl heptyl homologs and the inactivity of the (positive) isomers of THC supports the hypothesis that these compounds may depend upon their interaction with specific recognition sites for their biochemical and behavioral effectiveness. Although it may be concluded that the tetrahydrocannabinoids activate specific transmitter receptors, the localization of this action to the GABAergic-cholinergic septohippocampal pathway seems to indicate that the endogenous ligand for this receptor is not a transsynaptic regulator of all GABAergic or cholinergic neurons. 21 references.

001167 Chiodo, Louis A.; Caggiula, Anthony R. Psychobiology Program, Dept. of Psychology, University of Pittsburgh, Pittsburgh, PA 15260 **Alterations in basal firing rate and autoreceptor sensitivity of dopamine neurons in the substantia nigra following acute and extended exposure to estrogen.** European Journal of Pharmacology. 67(1):165-166, 1980.

The effects of estrogen on the activity of dopaminergic neurons in the zona compacta of the substantia nigra of ovariectomized female rats were determined. Intravenous injections of 17-beta-estradiol benzoate (EB) produced an acute increase in the firing rate of type-A cells (which increase firing in response to activating stimuli) and decreased activity in type-B neurons (which decrease discharge in response to activating stimuli). Within 48 hours of subcutaneous administration of EB, these effects were reversed; supersensitive autoreceptor responses of type-A cells and subsensitive responses of type-B cells to presynaptic doses of apomorphine were observed. 5 references.

001168 Cho, T. M.; Law, P. Y.; Loh, H. H. Dept. of Pharmacology, University of California, San Francisco, CA 94143 **A proposed mode of action for narcotic agonists and antagonists.** Advances in Biochemical Psychopharmacology. 20:69-101, 1979.

Ion pair theory is used to describe the interaction of narcotic agonists and antagonists with the opiate receptor. According to this theory, a receptor can exist in either hydrophilic or hydrophobic form, depending on the ionic interaction with cationic ligands. Opiate agonists act by forming intimate ion pairs with the receptor and increasing the hydrophobic state. Antagonists reverse the effects of agonists by displacing agonist binding to the receptor and forming solvent separated ion pairs. Studies of the interaction of opiates with the model opiate receptor cerebroside sulfate support the proposed theory, provide an explanation for the pharmacological action of opiates, and suggest that cerebroside sulfate may be a component of the opiate receptor. 56 references.

001169 Christensen, A. V.; Nielsen, I. Moller. Dept. of Pharmacology and Toxicology, H. Lundbeck & Co. A/S, Copenhagen, Denmark **Dopaminergic supersensitivity: influence of dopamine agonists and drugs used for the treatment of tardive dyskinesia.** Advances in Biochemical Psychopharmacology. 24:341-349, 1980.

The influence of dopamine agonists and drugs used for the treatment of tardive dyskinesia on dopaminergic supersensitivity was investigated. Results indicate that the effects of neuroleptics on dopamine (DA) neuron systems are a dynamic process. First, receptor blockade is induced, but when the receptor blockade has declined the receptor is not left in the same condition as it was before the induction of receptor blockade; it has increased its sensitivity to DA agonists. Furthermore, behavioral results have shown that the supersensitivitiy is enhanced time dependently by repeated administration, and this could explain the lacking effect on DA stimulated adenylate cyclase and DA receptor binding shown after a single dose of the neuroleptic. It is concluded that the functional supersensitivity which probably follows in all cases of neuroleptic treatment is not the cause of tardive dyskinesia, but that a more permanent damage must be involved. 26 references.

001170 Cleau, M.; Pointis, D.; Gekiere, F.; Borenstein, P. Laboratoire de Psychopharmacologie neurophysiologique, 54 avenue de la Republique, F-94800 Villejuif, France **Neurophysiological study of two O-anisamide derivatives: sulpiride and sultopride.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1009-1014).

Using three distinct electrophysiological tests in unanesthetized cat preparations (sleep-wakefulness cycle, hippocampal theta, and stereotyped hindlimb locomotor rhythms), two psychotropic benzamide derivatives (sulpiride and sultopride) were tested through systemic administration and local intracerebral microinjections. It was found that: 1) both drugs act at the hypothalamic level; and 2) sulpiride is an excitator, while sultopride is clearly a depressor. 1 reference. (Author abstract modified)

001171 Clemens, James A. Lilly Research Laboratories, Eli Lilly and Co., Indianapolis, IN 46206 **Serum prolactin during aging and the effects of ergots.** Advances in Biochemical Psychopharmacology. 23:315-321, 1980.

The effects of aging on serum prolactin levels are reviewed. In aging female rats, serum prolactin levels gradually become elevated and normal reproductive cycles stop. Some rats cease to ovulate and enter a state of continuous estrus; others continue to ovulate periodically but have irregular cycles or repeated pseudopregnancies. Hypothalamic dopamine levels decrease and lead to enhanced prolactin release, hyperplasia of mammotrophs, and eventual formation of a pituitary tumor. Lergotrile mesylate did not cause a postovariectomy use in serum LH in old pseudopregnant rats. In contrast to these findings in rats, serum prolactin levels do not become elevated with age in rabbits or humans, and the pituitary gland showed continues to show the normal prolactin secretory response to blockade of dopamine receptors. 12 references.

001172 Clement-Cormier, Yvonne. Departments of Pharmacology and Neurobiology, University of Texas Medical School, P.O. Box 20708, Houston, TX 77025 **Dopamine-sensitive adenylate cyclase and receptor binding activities following acute and chronic neuroleptic drug treatment. (Unpublished paper).** Research Report, NIMH Grant R03-MH-32431, 1980. 23 p.

Changes in CNS dopamine receptor response and binding activity in rats caused by acute, subchronic, and chronic haloperidol treatment and withdrawal were monitored, and the results

revealed that dopamine-sensitive adenylate cyclase activity in chronic haloperidol-treated animals is comparable to the control group but dopamimetic agonists and antagonists binding are increased. The drug-treated group, however, showed a decreased binding capacity for adrenergic, ergot alkaloid, and apomorphine sites. Compensatory changes of the binding capacity for several of these ligands in the striatum are counterbalanced by opposing changes in binding activity in the cerebellum. The data also revealed that the increased binding capacity for the drug-treated group may be linked to changes in modulator (regulator) proteins, which also increase during chronic haloperidol treatment. 23 references. (Author abstract)

001173 Clouet, Doris H.; O'Callaghan, James P. New York State Office of Drug Abuse Services, Testing and Research Laboratory, Brooklyn, NY 11217 **Role of protein kinases in opiate actions in brain.** Advances in Biochemical Psychopharmacology. 20:281-300, 1979.

Research on the role of protein kinases in opiate actions in brain is reviewed. Protein kinases, their mechanisms of action and their substrates, the modulation of phosphorylation (by cyclic nucleotides, ions, protein modulators, protease action, or by other agents), protein kinases and neuronal activity, morphine and protein kinase activity, and implications for opiate action are described. Studies in rats treated chronically with morphine have revealed decreased phosphorylation of certain proteins in synaptic plasma membranes from striatal homogenates. 102 references.

001174 Clow, A.; Theodorou, A.; Jenner, P.; Marsden, C. D. Marsden: University Dept. of Neurology, Institute of Psychiatry, London SE5, England **A comparison of striatal and mesolimbic dopamine function in the rat during 6-month trifluoperazine administration.** Psychopharmacology. 69(3):227-233, 1980.

The effects on striatal and mesolimbic dopamine function of 6 months trifluoperazine (TFP) administration were investigated in rats. Initial inhibition of apomorphine-induced stereotyped behavior, which lasted for 2 weeks after the beginning of drug administration, was replaced by an exaggerated response to apmorphine after 6 months drug intake. Striatal dopamine sensitive adenylate cyclase activity was inhibited at 1 month and 3 months, but by 6 months was enhanced compared to control values. Mesolimbic adenylate cyclase activity was inhibited after 2 weeks and thereafter returned to control levels. Dopamine-identified 3H-spiperone binding sites in the striatum were increased by 2 weeks, reduced at 1 month and increased again at 6 months. In mesolimbic areas, 3H-spiperone binding was increased at 2 weeks and 1 month but thereafter returned to control levels. 24 references. (Author abstract modified)

001175 Clow, A.; Theodorou, A.; Jenner, P.; Marsden, C. D. University Dept. of Neurology, Institute of Psychiatry, Denmark Hill, London, England **Changes in cerebral dopamine function induced by a year's administration of trifluoperazine or thioridazine and their subsequent withdrawal.** Advances in Biochemical Psychopharmacology. 24:335-340, 1980.

Changes in cerebral dopamine (DA) function induced by a year's administration of trifluoperazine or thioridazine and their subsequent withdrawal are described. Results demonstrate that the initial blockade of cerebral DA receptors produced by trifluoperazine and thioridazine is replaced after some months of drug therapy with an enhancement of DA activity while drug intake continues. This effect appears to be dependent on the dose of neuroleptic administered. The apparent enhancement of cerebral DA activity produced by these neuroleptics in rodents is in agreement with the clinical picture of tardive dyskinesias in man. In particular, the enhancement of apomorphine-induced compulsive mouthing movements and indeed the occurrence of an increased incidence of spontaneous mouthing movements is reminiscent of the oro/bucco/lingual manifestation of human tardive dyskinesias. 9 references.

001176 Contreras, G.; Contreras, E.; Gonzalez, C.; Concha, J. Dept. of Physiology, University of Concepcion, Concepcion, Chile **Acute and chronic effects of morphine on transmembrane potential and on short-circuit current in isolated toad skin: apparent morphine dependence.** Neuropharmacology. 19(11):1081-1086, 1980.

Morphine depressed the transmembrane potential and short circuit current in isolated toad skin in vitro. Naloxone did not antagonize these effects. Skin from toads treated chronically with morphine showed tolerance to the electrical effects of morphine in vitro. Acute administration of morphine did not significantly alter electrical responses to isoproterenol, but skin from toads treated chronically with morphine showed an enhancement of the short circuit current and a decrease of the transmembrane potential when isoproterenol was administered. 29 references. (Author abstract modified)

001177 Conway, Robert S.; Weiss, Harvey R. Weiss: Dept. of Physiology and Biophysics, Rutgers Medical School, P.O. Box 101, Piscataway, NJ 08854 **Effect of papaverine on regional cerebral blood flow and small vessel blood content.** European Journal of Pharmacology. 68(1):17-24, 1980.

The effect of i.v. infusion of papaverine (2.0 to 2.5mg/kg) on regional cerebral blood flow and small vessel blood content was determined in anesthetized rabbits. Papaverine increased flow in all regions, but the effect was greater in the hindbrain than in the forebrain. The drug did not significantly alter small vessel blood content or calculated open capillary density. Results indicate that papaverine affected only cerebral arterioles and had no functional effect on cerebral precapillary sphincters. 29 references. (Author abstract modified)

001178 Cools, A. R. Dept. of Pharmacology, University of Nijmegen, NL-6500 HB Nijmegen, The Netherlands **Rapid development of hypersensitivity and hyposensitivity to apomorphine and haloperidol: role of norepinephrine receptor mechanisms in CNS.** Advances in Biochemical Psychopharmacology. 24:215-222, 1980.

The role of norepinephrine (NE) receptor mechanisms in the rapid development of hypersensitivity and hyposensitivity to apomorphine and haloperidol was investigated. Analysis of the nature and site of the first link of the chain of successive response triggered by acute and subchronic administration of the classic neuroleptic haloperidol has revealed that at least three different classes of catecholaminergic receptors are involved: striatal DAe, mesolimbic DAi, and mesolimbic alpha-like NE. Clinical implications of the finding that mesolimbic alpha-like NE receptors play a crucial role in the acute and subchronic effects of classic neuroleptics include: 1) the therapeutic efficacy of antipsychotic drugs such as haloperidol may at least partly be due to their ability to affect the mesolimbic alpha-like NE receptor mechanism; and 2) deficits in the mesolimbic alpha-like NE mechanism have to be considered as one of the possible etiological factors underlying symptoms characteristic for psychomotor disorders such as Parkinson's disease, Huntington's chorea, schizophrenia, depression, and mania. 24 references.

001179 Cooper, Brian York. University of Iowa **Evoked potential changes in the superior colliculus parallel the lesion induced development of grooming reflexes in the cat. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2376-B, 1980. Ann Arbor, Univ. Microfilms No. 8028250, 249p., 1980.

The relationship between electrophysiological events in the superior colliculus and grooming reflexes in 11 normal cats was examined by implanting electrodes unilaterally in the superior colliculus and the ipsilateral somatosensory cortex. Gross evoked potentials elicited by stimulation of the contralateral thigh were measured. The effect of 5-HTP on evoked potentials was determined. Changes in grooming reflexes were accompanied by increases in threshold and decreases in amplitude of the evoked response across all conditions. Prior to the pontile lesion, 5-HTP decreased the mean amplitude of the evoked potential without modifying the threshold. Following the pontile lesion, 5-HTP reduced evoked potential threshold without modifying amplitude. Hydrocortisone increased the evoked potential amplitude. Methysergide decreased the receptive field of the grooming reflexes. Other pharmaca used (DOPA and tryptophan) were without effect in modifying either the evoked potentials or the grooming reflexes when administered in doses equimolar to 5-HTP. It is likely that the changes observed in the collicular evoked potentials represent the effects of local decreases in 5-HTP content and circulating glucocorticoids. (Journal abstract modified)

001180 Cooper, Ralph L.; Linnoila, M. Center for the Study of Aging and Human Development, Box 3003, Duke University Medical Center, Durham, NC 27710 **Effects of centrally and systemically administered L-tyrosine and L-leucine on ovarian function in the old rat.** Gerontology. 26(5):270-275, 1980.

The effects of centrally- and systemically-administered L-leucine and L-tyrosine on ovarian function were studied in the old female rat. Systemically-administered L-tyrosine reinstated regular vaginal cycling and ovulation, whereas systemically-administered L-leucine did not. When administered centrally, through an indwelling cannula in the medial preoptic area, neither L-tyrosine nor L-leucine altered the ovarian or vaginal condition of the old female. When these females were subsequently treated with L-dopa, both systemic and central application were found to reinstate ovarian cycles. Potential mechanisms of action at the level of CNS monoaminergic neurotransmission are discussed. 17 references. (Author abstract)

001181 Costa, E. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Receptor plasticity: biochemical correlates and pharmacological significance.** Advances in Biochemical Psychopharmacology. 24:363-377, 1980.

In a review of the biochemical correlates and pharmacological significance of receptor plasticity, three examples of regulation of receptors by translocation of proteins from the membrane to the cytosol are discussed: 1) the supersensitivity of dopamine receptors after a protracted treatment with haloperidol; 2) the translocation of the recognition sites for beta-adrenergic receptors from frog erythrocyte membrane to cytosol during desensitization caused by persistent receptor occupancy by the agonists; and 3) the translocation of GABA-modulin from the membrane of GABA receptors to the intracellular fluid, causing the unmasking of high affinity GABA receptors. The significance of membrane fluidity in models for receptor regulation is described. 37 references.

001182 Costa, E.; Guidotti, A.; Hanbauer, I.; Hexum, T.; Laiani, L.; Yang, H.-Y. T. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Regulation of cholinergic transmission in adrenal medulla. (Unpublished paper).** Washington, DC, NIMH, 1980. 9 p.

The question of whether the activation of opiate receptors modifies the amount of catecholamines released by the activation of nicotinic cholinergic receptors is addressed. It was found that the secretion of opiate peptides from medulla is stimulated by acetylcholine, morphine, and electrical stimulation of the splanchnic nerve. The secretion of peptides elicited by electrical stimulation cannot be blocked by naloxone or atropine suggesting that nicotinic receptors may be operative. Morphine acts indirectly because it fails to cause secretion when injected into dogs with denervated adrenal or when added to the primary cultures of bovine chromaffin cells. In these cell cultures the secretion of opiate peptides appears to be mediated by nicotinic receptors; in contrast, the secretion from dog adrenal can be elicited by methacholine. The hypothesis that the coexistence of neuropeptides and primary transmitters in splanchnic axons may be an index of a functional interaction between primary transmitter and cotransmitter neuropeptide at postsynaptic receptors on chromaffin cells is advanced. Also, it is proposed that the opiate peptides secreted from the adrenal medulla may be viewed as modulators for the number of peripheral receptors to acetylcholine and, perhaps, other transmitters. 9 references.

001183 Coupland, R. E.; Bustami, F. Dept. of Human Morphology, University of Nottingham, Nottingham, England **Influence of drugs affecting the pituitary adrenal axis on chromaffin cells.** Advances in Biochemical Psychopharmacology. 25:175-183, 1980.

Research studies concerning the influence of drugs affecting the pituitary adrenal axis on chromaffin cells are described. Changes in epinephrine (E) secreting and norepinephrine (NE) secreting cells following cyproterone acetate (CPA) administration involve an increase in specific cell organelles including Golgi apparatus, microfibrils, endoplasmic reticulum, and possibly mitochondria, as well as a gradual reduction in the number of secretory granules. Results suggest that preganglionic nerve fibers and endings in the vicinity of the affected cells are more prominent than usual. This fact, together with signs of cell stimulation suggests that the nervous system may be important in the changes. 15 references.

001184 Cowen, P. J.; Nutt, D. J.; Green, A. R. MRC Unit of Clinical Pharmacology, Radcliffe Infirmary, Woodstock Road, Oxford OX2 6HE, England **Repeated electroconvulsive shock does not increase the susceptibility of rats to a cage convulsant (isopropylbicyclophosphate).** Neuropharmacology. 19(10):1025-1026, 1980.

The effects of repeated electroconvulsive shock (ECS) on the susceptibility of rats to a cage convulsant (isopropylbicyclophosphate; IPTBO) were investigated. Intravenous infusion of IPTBO produced a seizure which was qualitatively very similar to that seen after picrotoxin in administration, but with a shorter latency. Pretreatment of rats with either a single ECS or a single ECS daily for 10 days did not alter the dose of IPTBO necessary to elicit a seizure 24 hr after the final ECS. These data, together with other previously published work argues against repeated ECS altering seizure susceptibility in rats. 5 references. (Author abstract modified)

001185 Creese, Ian. Dept. of Neurosciences, School of Medicine, University of California, San Diego, La Jolla, CA 92093 **Central nervous system dopamine receptors.** Advances in Biochemical Psychopharmacology. 21:235-242, 1980.

Recent research concerning the existence of multiple dopamine receptors in brain is reviewed. Studies of CNS dopamine receptors with the dopamine sensitive adenylate cyclase, 3H-agonist and 3H-antagonist binding have clearly demonstrated that two distinct dopamine receptors with different pharmacological specificities exist in the brain. These receptors are subject to both up and down regulation by agonist availability, while the cyclase linked receptors are also subject to regulation

by guanine nucleotides. The receptors labeled with 3H-antagonists appear to be the classic postsynaptic dopamine receptors through which the antischizophrenic action of neuroleptic antipsychotic drugs is mediated. It is noted that increases in dopamine receptors following chronic neuroleptic treatment may be the cause of tardive dyskinesia. 33 references.

001186 Creese, Ian; Sibley, David R. Dept. of Neuroscience, University of California Medical School at San Diego, La Jolla, CA 92037 **Radioligand binding studies: evidence for multiple dopamine receptors.** Communications in Psychopharmacology. 3(6):385-395, 1979.

The use of radioligands to label dopaminergic binding sites in the CNS and pituitary is discussed with reference to new studies of the pituitary as well as previous evidence of multiple dopamine receptors. The pituitary appears to contain at least two binding sites, homogeneous for dopamine antagonists but heterogeneous for agonists. In the striatum, antagonist binding is also heterogeneous. The striatal sites can also be differentiated on the basis of sensitivity to guanine nucleotides and have at least two anatomical localizations (corticostriate terminals and striatal intrinsic neurons). The relationship of these radioligand sites to dopamine sensitive adenylate cyclase is not yet clear. These multiple binding sites may represent multiple receptors, multiple receptor states, or both. 40 references.

001187 Cretet, Elisabeth; Prioux-Guyonneau, Monique; Jacquot, Christian; Sentenac, Henri; Wepierre, Jacques. Equipe de Recherche Associee du CNRS No. 627, Faculte de Pharmacie, F-92290 Chatenay-Malabry, France **Effect of tabernanthine on the turnover time of brain catecholamines in normal and hypobaric hypoxic rats.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):119-123, 1980.

The central effects of tabernanthine on noradrenaline and dopamine turnover times were studied in the hypothalamus, striatum, and remainder of the brain in normal and hypobaric hypoxic male Sprague-Dawley rats. The drug did not modify cerebral catecholamine levels in either group, but slightly decreased catecholamine turnover times at normal atmospheric pressure. Hypobaric hypoxia increased catecholamine turnover times by inhibiting oxygen dependent enzymes, and this effect was antagonized by tabernanthine, particularly in dopaminergic regions. 20 references. (Author abstract modified)

001188 Crews, Fulton T.; Morita, Yutaka; McGivney, Anne; Hirata, Fusao; Siraganian, Reuben P.; Axelrod, Julius. Dept. of Pharmacology, University of Florida College of Medicine, Gainesville, FL 32610 **IgE mediated histamine release in rat basophilic leukemia cells: receptor activated phospholipid methylation, Ca flux and release of arachidonic acid. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 30 p.

Data are presented to show that stimulation of IgE receptors on rat basophilic leukemia cells (RBL) causes a transient rise and fall of methylated phospholipids, Ca2 influx, and release of arachidonic acid previously incorporated in phosphatidylcholine, and liberation of histamine. Inhibition of phospholipid methylation by methyltransferase inhibitors, 3-deazaadenosine and homocysteine thiolactone, almost completely blocks the influx of Ca2 and release of arachidonic acid and histamine. The Ca2 ionophore A23187 also releases histamine which is only partially blocked by methyltransferase inhibitors. (14C)-Arachidonic acid is mainly incorporated into phosphatidylcholine arising from the methylation pathway while (14C)-linoleic acid is primarily incorporated into phosphatidylcholine coming from the CDP choline or base exchange pathway. Stimulation of IgE receptors by antigen releases only (14C)-arachidonic acid while the Ca2 ionophore releases (14C)-arachidonic acid as well as many other fatty acids previously incorporated into phosphatidylcholine. The results support the hypothesis of a close association of the IgE receptor, phospholipid methylation, Ca2 flux, arachidonic acid and histamine release in RBL cells. 28 references. (Author abstract modified)

001189 Cuenca, E.; Galiana, J.; Serrano, M. I.; Alamo, C.; Gibert-Rahola, J.; Lafuente, L.; Casais, L. Dept. of Pharmacology and Therapeutics, Cadiz School of Medicine, Cadiz, Spain **Some pharmacological and biochemical aspects of T.R.H.: experimental and clinical data.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 769-773).

The observation that TRH enhances the response of noradrenaline (NE) in the isolated rat vas deferens was assessed, with an emphasis on the pharmacological and biochemical aspects. MAO activity and NE uptake were measured in the presence or absence of TRH. The results show that TRH does not inhibit MAO activity and that it increases the uptake process. TRH in an open clinical trial with women was most effective in endogenous depression. T4 and total lipids increased significantly over basal values in this group. Cholesterol also increased, but differences were not significant. Preliminary results in the rat studies suggest that these changes are not due to prolactin release. In mice, TRH shows antinociceptive properties which are reversed by naloxone. This antagonism, however, seems due to the hyperalgesia elicited by naloxone, but not to a competitive mechanism. 14 references. (Author abstract modified)

001190 Davies, J. A.; Graham, J. D. P. Dept. of Pharmacology, Welsh National School of Medicine, Cardiff, Wales **The mechanism of action of delta9-tetrahydrocannabinol on body temperature in mice.** Psychopharmacology. 69(3):299-305, 1980.

The effect of delta9-tetrahydrocannabinol (delta9-THC) on body temperature of the mouse was studied. A dose response relationship for the hypothermic effect of delta9-THC was seen. The relatively specific dopamine antagonist haloperidol potentiated delta9-THC-induced hypothermia as did the alpha-adrenoceptor antagonist phenoxybenzamine. However, depletion of serotonin with p-chlorophenylalanine reduced the hypothermic response to delta9-THC as did pretreatment with the serotonin antagonist methysergide. Inhibition of reuptake of serotonin with clomipramine potentiated the hypothermia following delta9-THC. It is suggested that the hypothermic effect of delta9-THC in the mouse is mediated to a large extent via serotonergic mechanisms. 27 references. (Author abstract modified)

001191 Davies, J.; Dray, A. Dept. of Pharmacology, School of Pharmacy, University of London, 20/39 Brunswick Square, London WC1 1AX, England **Depression and facilitation of synaptic responses in cat dorsal horn by substance P administered into substantia gelatinosa.** Life Sciences. 27(22):2037-2042, 1980.

The effects of substance-P and an enkephalin analogue administered by electrophoresis into the substantia gelatinosa on the synaptic responses of dorsal horn neurons evoked by peripheral stimulation were examined. Extracellular neuronal firing was studied in cats under pentobarbitone anesthesia. The enkaphalin produced naloxone reversible depression of responses to noxious heat stimulation without affecting responses to nonnoxious stimuli. Substance-P caused a selective enhancement or depression of noxious responses. It is concluded tentatively that substance-P may modify the relapse of a sensory transmitter and produce direct postsynaptic changes in membrane excitability. 21 references. (Author abstract modified)

001192 Davis, W. C.; Ticku, M. K. Dept. of Pharmacology, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78284 **Solubilization of the dihydropi-**

crotoxinin binding sites. European Journal of Pharmacology. 68(3):397-398, 1980.

Solubilized alpha-dihydropicrotoxinin (DHP) binding sites from rat brain were studied. Ligand recognition properties of picrotoxinin receptors were not altered by solubilization. Scatchard analysis of the soluble receptors revealed the presence of both high and low affinity binding sites, in contrast to the single site reported for membrane receptors. 5 references.

001193 Davison, Meredith; Koss, Michael. Basic Science Dept., Oklahoma College of Osteopathic Medicine and Surgery, P.O. Box 2280, Tulsa, OK 74101. **Central sympathetic reactivity inhibited by indoramin.** European Journal of Pharmacology. 68(2):193-196, 1980.

The action of indoramin on central autonomic activity was investigated in cats, using the sympathetic cholinergic electrodermal response system. Indoramin (0.33 to 10mg/kg i.v.) caused a significant, dose-related reduction in the amplitude of electrodermal responses evoked by stimulation of the hypothalamus. This effect was partially antagonized by pretreatment with yohimbine. Results indicate that indoramin reduces central sympathetic reactivity, possibly through an alpha-adrenergic inhibitory mechanism. 10 references. (Author abstract modified)

001194 Debeljuk, L.; Goijman, S.; Seilicovich, A.; Diaz, M. C.; Rettori, V. B. Centro de Investigaciones en Reproduccion, Facultad de Medicine, 1121 Buenos Aires, Argentina **Effect of aminooxyacetic acid and bicuculline on prolactin release in castrated male rats.** Life Sciences. 27(22):2025-2029, 1980.

To investigate the role of GABA in prolactin secretion, castrated male rats were infused with aminooxyacetic acid (AOAA) or bicuculline, two drugs that affect GABA metabolism or its binding to the receptors, respectively. The infusion of AOAA or bicuculline for 2 hr did not significantly modify serum prolactin levels. A quick iv injection of sulpiride, a drug that induces hyperprolactinemia, brought about a significantly lower release of prolactin in rats infused with AOAA than in control rats, infused with saline. The response to sulpiride in rats infused with bicuculline was significantly greater, in terms of prolactin release, than in control rats. These results suggest that GABA may have an inhibitory role on the regulation of prolactin release. 12 references. (Author abstract)

001195 Deniker, P.; Loo, H.; Zarifian, E. Hopital Sainte-Anne, 1, rue Cabanis, F-75674 Paris Cedex 14, France /**New data on the use of antidepressant drugs.**/ Donnees nouvelles sur l'emploi des medicaments antidepresseurs. Annales Medico-Psychologiques. 138(1):103-113, 1980.

New data on the actions of antidepressant drugs are discussed. Better knowledge of the therapeutic profile of each drug and its biochemical action aids in a more rational usage. The new data concern a precise characterization of the therapeutic spectrum of the drug, the knowledge of the mechanism of action of the drug, the biochemical profile of depression, the pharmacokinetic data about the efficient plasmatic levels of the drug (metabolism and route of administration), and the discovery of new antidepressants different from tricyclics and monoamine oxidase inhibitor. 37 references. (Journal abstract modified)

001196 Docherty, J. R.; McGrath, J. C. Albert-Ludwigs Universitat, Pharmakologisches Institut, Hermann-Herder-Strasse 5, D-7800 Freiburg i. Br., West Germany **An examination of factors influencing adrenergic transmission in the pithed rat, with special reference to noradrenaline uptake mechanisms and postjunctional alpha-adrenoceptors.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):101-111, 1980.

Experiments in pithed male Wistar rats showed that the vascular effects of exogenous noradrenaline (NA) and of adrenergic nerve stimulation are exerted via a dual population of alpha-adrenoceptors and terminated by uptake processes for NA. Pressor and cardiac responses to sympathetic nerve stimulation or to i.v. NA were potentiated by blockade of neuronal uptake. Blockade of extraneuronal uptake potentiated only the pressor effect of NA. Pressor effects of NA and of sympathetic nerve stimulation appeared to be due to activation of both alpha1 and alpha2-adrenoceptors. The antidepressant drug mianserin potentiated adrenergic responses in low doses and produced limited antagonism at postjunctional alpha1-adrenoceptors in high doses, but had no detectable effect at postjunctional alpha2-adrenoceptors. 29 references. (Author abstract modified)

001197 Domer, Floyd R.; Sankar, Raman; Cole, Steven; Wellmeyer, David. Dept. of Pharmacology, Tulane University School of Medicine, New Orleans, LA 70112 **Dose-dependent, amphetamine-induced changes in permeability of the blood-brain barrier of normotensive and spontaneously hypertensive rats.** Experimental Neurology. 70(3):576-585, 1980.

The effects of acute administration of i.v. amphetamine on the permeability of the blood-brain barrier (BBB) to 131I-radioiodinated human serum albumin were investigated. In normotensive rats, the response was dose dependent and biphasic. The permeability was increased by doses of 7.5mg/kg or less and the permeability was decreased by doses of 15mg/kg and 30mg/kg. The response to amphetamine in spontaneously hypertensive rats was quite different. The permeability of the BBB was greater in the saline-treated spontaneously hypertensive animals than in the saline-treated normotensive animals. Doses of amphetamine to as much as 5mg/kg caused an increase in permeability, but much less than was found in the normotensive animals. At doses of amphetamine from 7.5mg/kg to 30mg/kg, there were no significant changes in permeability of the BBB. There was a high correlation between the acute change in blood pressure caused by the administration of amphetamine and the change in permeability of the BBB. 36 references. (Author abstract modified)

001198 Domino, Edward F. Dept. of Pharmacology, University of Michigan, Ann Arbor, MI 48109 **Opiate interactions with cholinergic neurons.** Advances in Biochemical Psychopharmacology. 20:339-355, 1979.

The effects of opiates on acetylcholine release (effects of morphine in guinea-pig ileum; ganglia, heart, and neuromuscular junction; spinal cord; cerebrum; and cortical slices), steady-state brain acetylcholine levels, and regional brain levels and turnover are reviewed. Cholinergic changes associated with opiate analgesia, tolerance, and withdrawal are also discussed. It is suggested that opiates have both direct and indirect effects on cholinergic neurons. 105 references.

001199 Dostalova, K.; Hrbek, Jan. Dr. S. Allende St. 3, 775 15 Olomouc, Czechoslovakia **Effect of pyritinol and piracetam on changes in free ammonia level in CNS tissue after paradoxical sleep deprivation in rats.** Activitas Nervosa Superior. 22(3):199-200, 1980.

The effects of pyritinol and piracetam on changes in free ammonia levels in CNS tissue after paradoxical sleep deprivation (PSD) were investigated in rats. Effects were assessed in cortex, hypothalamus, brainstem, and cerebellum after 3, 6, or 9 hours of restitution sleep. Although acute administration of pyritinol or piracetam had no significant effect on free ammonia production, chronic application produced a significant reduction of ammonia production in cortex and brainstem. When administered chronically, both drugs influenced primarily the sleep restitution

phase. There was a significant acceleration in the return of free ammonia level to initial values as early as 3 hr after the beginning of restitution sleep. 3 references.

001200 Drago, Filippo; Gorgone, Giovanni; Spina, Francesco; Panissidi, Giovambattista; Dal Bello, Alberto; Moro, Ferruccio; Scapagnini, Umberto. Instituto di Farmacologia, Facolta di Medicina e Chirurgia, viale A. Doria 6, I-95125 Catania, Italy **Opiate receptors in the rabbit iris.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(1):1-4, 1980.

Intraocular injection of morphine (10 to 100mcg) or D-Ala2-met-enkephalinamide (5 to 50mcg) induced a significant dose-dependent decrease in pupillary size and an appreciable fluctuation in pupillary size in male New Zealand rabbits. Naloxone (0.5mg/kg i.v.) antagonized these effects. It is suggested that the opiate-induced miosis may be mediated by stimulation of prejunctional opiate receptors on noradrenergic neurons in the iris. 17 references. (Author abstract modified)

001201 Driscoll, Bernard F.; Kies, Marian W.; Alvord, Ellsworth C., Jr. Section on Myelin Chemistry, Laboratory of Cerebral Metabolism, NIMH, Bethesda, MD 20205 **Enhanced transfer of experimental allergic encephalomyelitis with strain 13 guinea pig lymph node cells: requirement for culture with specific antigen and allogenic peritoneal exudate cells. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 31 p.

A method for enhancement of transfer of experimental allergic encephalomyelitis (EAE) with sensitized lymph node cells (LNC) by culture with specific antigen and allogenic peritoneal exudate cells (PEC) is presented. The technique provides opportunity for examining the roles of various cell populations and signals in the regulation of delayed type hypersensitivity, particularly their contributions to the pathogenesis of EAE. Data are presented that show that LNC from sensitized guinea-pigs display neither enhanced transfer nor antigen specific proliferation after culture with myelin basic protein. Enhanced transfer is obtained, however, if a second nonspecific signal is available. This second signal is provided by the presence of normal allogenic strain-2 PEC in culture. A final requirement is that the LNC must be previously sensitized in vivo. The proliferation results from the expression of different I-region antigens on strain 2 PEC cells and strain 13 sensitized LNC cells. 27 references.

001202 Driscoll, Peter; Dedek, Jaroslav; Martin, James R.; Baettig, Karl. Institut fur Verhaltenswissenschaft, ETHZ, CH-8092 Zurich, Switzerland **Regional 5-HT analysis in Roman high- and low-avoidance rats following MAO inhibition.** European Journal of Pharmacology. 68(3):373-376, 1980.

Levels of 5-hydroxytryptamine (5-HT) and 5-hydroxyindoleacetic acid (5-HIAA) were determined in three brain regions of Roman high and low avoidance rats 10, 30, and 60 minutes after injection of the monoamine oxidase inhibitor pargyline. In the high avoidance rats, 5-HT levels in the cortex were elevated 30 and 60 minutes after pargyline and the rate of 5-HIAA disappearance in midbrain/medulla was accelerated. Results are discussed in relation to the role of 5-HT in avoidance learning and behavioral responses to stress. 13 references. (Author abstract modified)

001203 Duggan, A. W.; Griersmith, B. T.; North, R. A. Dept. of Pharmacology, John Curtin School of Medical Research, P.O. Box 334, Canberra City, ACT, 2601, Australia **Morphine and supraspinal inhibition of spinal neurones: evidence that morphine decreases tonic descending inhibition in the anaesthetized cat.** British Journal of Pharmacology. 69(3):461-466, 1980.

In anesthetized cats, morphine (0.3 to 1.0mg/kg) reduced the excitation of dorsal horn neurons by C-fiber afferents and reduced the increase in action potential produced by blocking conduction in the spinal cord. Naloxone (0.1 to 0.3mg/kg) antagonized these effects of morphine. Results do not support the hypothesis that an important component of morphine analgesia is an activation of descending inhibitory pathways. 25 references. (Author abstract modified)

001204 Dumbrille-Ross, Anne; Tang, Siu Wa; Seeman, Philip. Psychopharmacology Section, Clarke Institute of Psychiatry, 250 College St., Toronto, Ontario, Canada MST 1R8 **High-affinity binding of (3H)mianserin to rat cerebral cortex.** European Journal of Pharmacology. 68(3):395-396, 1980.

The presence of a high affinity binding site for tritiated racemic mianserin was demonstrated in male Wistar rat cerebral cortex. Specific mianserin binding was displaced by low concentrations of tricyclic antidepressants and by higher concentrations of atypical antidepressants (iprindole and nomifensine). Binding was also inhibited by serotonin, serotonin receptor antagonists, and serotonin uptake inhibitors. 5 references.

001205 Dun, N. J. Dept. of Pharmacology, Loyola University Stritch School of Medicine, Maywood, IL 60153 **Inhibition of ACH release by prostaglandin E1 in the rabbit superior cervical ganglion.** Neuropharmacology. 19(11):1137-1140, 1980.

In isolated rabbit superior cervical ganglia, low concentrations of prostaglandin-E1 (PGE1, 0.01 to 0.5mcM) reversibly depressed the amplitude of the fast excitatory postsynaptic potential (f-epsp) evoked by preganglionic nerve stimulation. Resting membrane potential and membrane resistance were not altered. In concentrations higher than 1mcM, PGE1 elicited a slow membrane depolarization accompanied by a reduction in membrane resistance. In concentrations that did not alter the membrane potential, PGE1 significantly reduced the f-epsp without affecting the potential induced by ionotophoretic application of aceylcholine (ACh) to ganglion cells. Results suggest that the primary action of PGE1 in sympathetic ganglia is the depression of synaptic transmission via a reduction in the amount of ACh released from preganglionic fibers. 9 references. (Author abstract modified)

001206 Dunstan, R.; Jackson, D. M. Dept. of Pharmacology, University of Sydney, Sydney, Australia **Long-term haloperidol-treatment of mice: a change in beta-adrenergic receptor responsiveness.** Journal of Neural Transmission. 44:187-195, 1979.

Mice administered haloperidol 3mg/kg/day for 21 days were tested for their locomotor responsiveness to saline or acid vehicle, dl, l, or d-propranolol, metoprolol, butoxamine, or practolol. Haloperidol-treated animals administered saline or acid vehicle were more active than animals withdrawn from vehicle treatment. Haloperidol and vehicle-treated animals responded differently to the nonselective beta-adrenoreceptor antagonists and to the selective beta-1-adrenoreceptor antagonists but not to a selective beta-2-adrenoreceptor antagonist. With dl-propranolol, l-propranolol, practolol, and metroprolol, the locomotor activity of haloperidol-treated animals was significantly greater than that of the vehicle-treated animals, while d-propranolol, which is about 50 times less active as a beta-adrenoreceptor antagonist than the l-isomer, did not differentially affect the haloperidol or vehicle-treated groups. The results suggest that there was a change in beta-1-adrenoreceptor responsiveness in animals withdrawn from long-term haloperidol treatment. (Author abstract modified)

001207 Dyck, Lillian E.; Boulton, Alan A.; Jones, Roland S. G. Psychiatric Research Division, University Hospital, Saskatoon, Saskatchewan, Canada S7N 0X0 **A comparison of the effects of methylphenidate and amphetamine on the simultaneous release of radiolabelled dopamine and p- or m-tyramine from rat**

striatal slices. European Journal of Pharmacology. 68(1):33-40, 1980.

A double label study of the release and uptake of 14C-dopamine (14C-DA) and tritiated para-tyramine or meta-tyramine (3H-pTA and 3H-mTA) in male Winstar rat caudate nucleus suggested that endogenous tyramines may be involved in mediating some actions of psychomotor stimulant drugs. Amphetamine caused a large concurrent release of 14C-DA and 3H-mTA or 3H-pTA. Methylphenidate caused a large release of 3H-pTA or 3H-mTA with a small concurrent release of 14C-DA. Reserpine did not alter release of the three amines by amphetamine or release of the tyramines by methylphenidate; release of 14C-DA by methylphenidate was increased in the presence of reserpine. The uptake of 14C-DA, 3H-pTA, and 3H-mTA was inhibited by amphetamine and by methylphenidate, but amphetamine was more potent. 23 references. (Author abstract modified)

001208 Ebadi, M.; Chweh, A. Dept. of Pharmacology, University of Nebraska, College of Medicine, 42nd St. and Dewey Ave., Omaha, NE 68105 **Inhibition by arylsulphatase A of Na-independent (3H)-GABA and (3H)-muscimol binding to bovine cerebellar synaptic membranes.** Neuropharmacology. 19(11):1105-1111, 1980.

The sodium-independent, high-affinity binding of (3H)-GABA and (3H)-muscimol to bovine cerebellar synaptic membranes was inhibited when the synaptic membrane suspensions were preincubated with arylsulphatase-A. The reduction in specific (3H)-GABA binding was directly correlated with the specific activity of arylsulphatase, as judged by the amounts of sulphate released when 4-nitrocatechol sulphate was used as a substrate. The inhibitory effect of arylsulphatase-A was blocked by arylsulphatase inhibitors. Scatchard analysis indicated that arylsulphatase decreased the number of (3H)-GABA binding sites from 2.65 to 1.75pmol/mg protein without significantly altering binding affinity. Results suggest that some components of GABA recognition sites may also contain sulpholipids as well as phospholipids. 47 references. (Author abstract modified)

001209 Edelfors, Sven. Dept. of Pharmacology, 20 Juliane Maries Vej, DK-2100 Copenhagen, Denmark **The effect of lithium on the incorporation of 3H-glucosamine into glycopeptides and the transformation of 3H-glucosamine into sialic acid in rat brain.** Acta Pharmacologica et Toxicologica. 47(4):259-262, 1980.

The incorporation of 3H-glucosamine into glycopeptides and the transformation of 3H-glucosamine into sialic acid were studied in brains of male Wistar rats fed a diet containing lithium for 5 weeks. Results showed that the lithium treatment had no effect on the total amount or specific activity of sialic acid or on the tritium content of the sialic-acid-free glycopeptides. 20 references. (Author abstract modified)

001210 Ehlers, C. L.; Mulbry, L. W.; Killam, E. K. Arthur Vining Davis Center for Neurobiology, Salk Institute, La Jolla, CA 92093 **EEG and anticonvulsant effects of dipropylacetic acid and dipropylacetamide in the baboon Papio papio.** Electroencephalography and Clinical Neurophysiology. 49(3-4):391-400, 1980.

The ability of dipropylacetic acid (DPA) and dipropylacetamide (DPM) to modify EEG and seizure activity was assessed in four female and three male baboons (Papio papio). Doses of 30 to 60mg/kg of DPA given at intervals over an 8 hr period produced blood levels of 19 to 44Mcg/ml which were not protective against intermittent light stimulation (ILS). Blood levels of DPA greater than 150Mcg/ml were highly protective against ILS. Similar results were obtained following administration of DPM; however, DPM appeared to offer greater protection against intermittent LS. Background EEG changes were similar for both compounds, and consisted of a striking increase in total spectral power and relative power changes in 10 to 20 c/sec range, the magnitude of which was related to blood levels of DPA. Both agents produced a quieting effect on behavior without severe depression. 20 references. (Author abstract modified)

001211 Eiden, Lee E.; Brownstein, Michael J. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Extrahypothalamic distributions and functions of hypothalamic peptide hormones. (Unpublished paper).** Bethesda, MD NIMH, 1980. 25 p.

The five neuropeptides discussed are the principal, chemically identified hormones produced by the magnocellular (vasopressin and oxytocin) and parvocellular (thyrotropin releasing factor, luteinizing hormone releasing factor, and somatostatin) endocrine hypothalamus. The radioimmunoassay and immunohistochemical evidence for the presence of these factors in central, peripheral, and enteric neurons and the gut endocrine system, and the electrophysiological and behavioral evidence for the roles played by peptide containing cells in each tissue are reviewed. It is proposed that these neuropeptides will be found to carry out multiple endocrine, paracrine, and neurotransmitter functions outside the hypothalamus. The present picture suggests a remarkable evolutionary and intraorganismic conservation of peptide hormones (and presumably their receptors) and an equally remarkable heterogeneity of the cell types and tissues in which they are found. 111 references.

001212 Eiden, Lee E.; Latker, Carole; Zatz, Martin. Unit on Neuroendocrinology, Laboratory of Clinical Science, Bldg. 10, Rm 2D-47, NIMH, Bethesda, MD 20205 **Retinal toxicity of MAM acetate is developmentally specific. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 9 p.

Methylazoxymethanol (MAM) toxicity in the retina as a function of time of administration during development was investigated. Pregnant rats received a single intraperitoneal injection of either MAM acetate in 0.9% saline or saline alone on one of days 11 through 20 of gestation. It was found that a single injection of the neurotoxin MAM administered during certain critical perinatal periods resulted in permanent dysplasia of retinal cytoarchitecture. 11 references. (Author abstract modified)

001213 Elrod, Steve Victor. The University of Texas at Austin **Tolerance to barbiturate-induced central nervous system depression: involvement of stimulus secretion coupling in discrete brain areas. (Ph.D. dissertation).** Dissertation Abstracts International. 40(3):1141-B, 1979. Ann Arbor, Univ. Microfilms No. 7920111, 133p., 1979.

Behavioral and functional tolerance to phenobarbital was induced in male Sprague-Dawley rats; whole brains and discrete brain areas of the drug-tolerant rats were studied. KCl-induced calcium influx into synaptosomes isolated from whole brain, cerebral cortex, brain stem, and cerebellum were found to be significantly depressed by the in vitro pentobarbital challenge while calcium influx into synaptosomes isolated from midbrain, caudate, and hypothalamus was not significantly depressed. When calcium total accumulation, nonspecific binding, and influx associated with depolarized and nondepolarized synaptosomes were investigated the cerebral cortex was the only area that exhibited a significant depression. Results suggest that events leading to stimulus secretion coupling, namely the influx of calcium, may be involved in barbiturate-induced central nervous system depression. It is also suggested that the plasma membrane of the nerve end has the capacity to adapt in the presence of chronic, and in some brain regions, acute phenobarbital exposure to allow for an enhanced calcium influx subse-

quent to depolarization, and that this system could be associated with tolerance to the central nervous system depressant action of the barbiturates. (Journal abstract modified)

001214 Engberg, Goran; Svensson, Torgny H. Dept. of Pharmacology, University of Goteborg, Box 33031, Goteborg, Sweden **Mianserin: direct activation of brain norepinephrine neurons by blocking alpha2-receptors.** Communications in Psychopharmacology. 4(3):233-239, 1980.

Microiontophoretic or i.v. application of mianserin caused a dose-dependent increase in the firing rate of a majority of noradrenergic neurons in the locus coruleus (LC) of male Sprague-Dawley rats. The drug consistently antagonized the LC inhibitory effect of clonidine. Microiotophoretic application of mianserin also antagonized the inhibition of LC neurons by norepinephrine (NE). It is concluded that mianserin causes direct activation of LC NE neurons by an alpha2-receptor antagonist action, probably by blocking a tonic NE-mediated autoinhibitory input to the LC. The tetracyclic compound may exert its antidepressant action in part by increasing synaptic availability of NE thereby activating central beta-receptors. 46 references. (Author abstract modified)

001215 Enna, S. J.; Ferkany, J. W.; Strong, R. Dept. of Pharmacology, University of Texas Medical School, P.O. Box 20708, Houston, TX 77025 **Drug-induced alterations in neurotransmitter receptor binding and function.** Advances in Biochemical Psychopharmacology. 21:253-263, 1980.

The effects of chronically-elevated brain GABA content on dopamine, GABA, and cholinergic muscarinic receptor binding in various rat brain regions were investigated. Results suggest that long-term elevations in brain GABA lead to dopamine receptor supersensitivity and GABA receptor subsensitivity in the rat corpus striatum. Behavioral experiments confirm that the increase in striatal dopamine receptor binding reflects a functional supersensitivity in this system. These findings suggest an inhibitory action for GABA on the nigrostriatal dopamine pathway, and that long-term use of these drugs may lead to the development of extrapyramidal symptoms similar to those observed after chronic administration of classical neuroleptics. 23 references.

001216 Eroglu, L.; Atamer-Simsek, S. Dept. of Pharmacology and Clinical Pharmacology, Istanbul Medical Faculty, University of Istanbul, Istanbul, Turkey **Effect of lithium on stress-induced changes in the brain levels of monoamines in rats.** Arzneimittel-Forschung. 30(12):2115-2117, 1980.

The effect of lithium on the brain levels of monoamines was examined in stress-exposed rats. It was found that stress lowered brain levels of noradrenaline and serotonin and had no effect on the brain level of dopamine. Lithium, alone, caused a decrease in brain levels of noradrenaline and dopamine, but not in serotonin. Nevertheless, the diminished level of serotonin in stress-exposed rats was increased by lithium treatment. It may be possible to make a correlation between the latter finding with the inhibitory effect of lithium on aggression in human beings and animals. 18 references. (Author abstract)

001217 Eroglu, L.; Binyildiz, P.; Atamer-Simsek, S. Dept. of Pharmacology and Clinical Pharmacology of Istanbul Medical Faculty, University of Istanbul, Istanbul, Turkey **Lithium-induced changes in the brain levels of free amino acids in stress-exposed rats.** Psychopharmacology. 70(2):187-189, 1980.

The effects of stress and lithium on brain free amino acid levels in rats were investigated. Stress caused a significant decrease in the brain levels of alanine, ammonia, arginine, isoleucine, lysine, and phenylalanine. Lithium by itself induced a significant increase in the brain levels of arginine and threonine, and a significant decrease in those of alanine, ammonia, aspartic acid, glutamic acid, glysine, lysine, phenylalanine, and tyrosine. Lithium and stress together significantly decreased brain levels of alanine, arginine, aspartic acid, glycine, isoleucine, leucine, lysine, phenylalanine, and tyrosine, and significantly increased that of serine. 21 references. (Author abstract)

001218 Euvrard, Catherine; Labrie, Fernand; Boissier, Jacques R. Centre de Recherche Roussel-Uclaf, F-93230-Romainville, France **Effect of moxestrol on haloperidol-induced changes in striatal acetylcholine levels and dopamine turn-over.** Communications in Psychopharmacology. 3(5):329-334, 1979.

The synthetic estrogen moxestrol (20mcg/kg/day for 5 days) greatly potentiated the haloperidol-induced decrease in striatal acetylcholine levels in male Sprague-Dawley rats. This effect was reversed by hypophysectomy and mimicked by pituitary transplants under the renal capsule. Moxestrol significantly decreased the striatal dopamine (DA) receptor supersensitivity following withdrawal from chronic haloperidol administration, but did not alter the basal or haloperidol-induced increase in striatal DA turnover. It is suggested that moxestrol exerts a postsynaptic antidopaminergic effect in the striatum that is mediated via pituitary gland. 13 references. (Author abstract modified)

001219 Faingold, Carl L. Dept. of Pharmacology, Southern Illinois University School of Medicine, P.O. Box 3926, Springfield, IL 62708 **Strychnine effects on the sensory response patterns of reticular formation neurons.** Electroencephalography and Clinical Neurophysiology. 50(1-2):102-111, 1980.

Strychnine (ST) effects on the sensory response patterns of reticular formation neurons were investigated. ST resulted in enhanced responses of reticular formation neurons of the cat to visual, auditory, or somatosensory stimuli. Neurons in the bulbar reticular formation (BRF) also exhibited ST-induced spike bursting which coincides with the onset of 10 Hz to 20 Hz high amplitude rhythmic discharge in the lower brainstem, often obscuring sensory response enhancement. Mesencephalic reticular formation (MRF) neurons showed enhanced sensory responsiveness at higher doses of ST but rarely showed spike bursting. The rhythmic discharge in the EEG of BRF and spike bursting in BRF neurons was not observed in animals with spinal cord transection suggesting that this bursting activity is due to the action of ST on the spinal cord. These findinga extend the concept that enhancement of RF responses to sensory stimuli may be indicative of a general neuronal action of convulsant agents which may be important in sensory-induced seizures. 25 references. (Author abstract modified)

001220 Fairchild, M. D.; Jenden, D. J.; Mickey, M. R.; Yale, C. V. A. Medical Center, Long Beach, CA 90822 **The quantitative measurement of changes in EEG frequency spectra produced in the cat by sedative-hypnotics and neuroleptics.** Electroencephalography and Clinical Neurophysiology. 49(3-4):382-390, 1980.

The effects on EEG in the cat of the sedative/hypnotic secobarbital, the sedative/antianxiety agent chlordiazepoxide, and two neuroleptics, chlorpromazine and haloperidol were assessed using broad band frequency analysis of six brain sites. Dose-related, drug-specific effects were abstracted from the data by the use of multivariate analyses. The two neuroleptics were found to produce similar alterations in the EEG frequency spectrum. These alterations were distinctly different from those resulting from the sedative/hypnotic or the sedative/antianxiety agent. The time course of the central activity of the four compounds is described. 25 references. (Author abstract modified)

001221 Ferkany, John William. Graduate School of Biomedical Science, University of Texas H.S.C. at Houston **The effect of GABAmimetics on neurotransmitter receptor binding and function in rat brain. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1215-B, 1980. Ann Arbor, Univ. Microfilms No. 8022197, 88p., 1980.

The neurochemical consequences of chronic activation of rat brain GABA systems were examined in an attempt to better define the therapeutic potential and possible side-effect liability of GABAmimetic compounds. Chronic (15 day) administration of low doses of amino-oxyacetic acid (10mg/kg, once daily), isonicotinic acid hydrazide (20mg/kg), or gamma-acetylenic GABA (10mg/kg) resulted in a significant elevation of brain and CSF GABA content throughout the course of treatment. In addition, chronic administration of these drugs, as well as the direct GABA receptor agonists THIP (8mg/kg) or kojic amine (18mg/kg), resulted in a significant increase in dopamine receptor number and a signficant decrease in GABA receptor number in the corpus striatum and occurred more rapidly than did alterations in the dopamine receptor. Coadministration of atropine blocked the GABA-T-inhibitor-induced increase in striatal dopamine receptors, but was without effect on' receptor alterations seen following chronic administration of direct acting GABA receptor agonists. Atropine administration failed to influence drug-induced decreases in striatal GABA receptors. Synaptsomal high affinity 3H-choline uptake was significantly increased in corpus striatum of animals treated acutely, but not chronically, with GABAmimetics. Implications of findings are discussed. (Journal abstract modified)

001222 Feuerstein, Giora; Helke, Cinda J.; Jacobowitz, David M.; Kopin, Irwin J. Laboratory of Clinical Science. Building 10, Room 2D-46, NIMH, Bethesda, MD 20205 **Mechanisms involved in central effects of prostaglandin F2alpha. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 31 p.

Prostaglandin F2alpha (PGF2alpha) injected into the cerebroventricular (i.c.v.) system of rats, increased arterial blood pressure, heartrate, respiration, and rectal temperature. These effects were accompanied by a preferential increase in plasma norepinephrine concentration. Bilateral vagotomy did not affect these responses. Hexamethonium suppressed primarily the blood pressure, temperature, and plasma norephinephrine response while the increase in heartrate and respiration rate were largely unaffected. Injection of PGF2alpha to anephric, hexamethonium-treated rats abolished the respiratory response, the blood pressure response and further attenuated the increase in rectal temperature. The increase in the heartrate and plasma norepinephrine concentration were not affected compared to the hexamethonium-treated rats. Injection of PGF2alpha to hypophysectomized, hexamethonium-treated rats resulted in moderate increases of blood pressure, heartrate, respiration rate, and plasma norepinephrine but not the rectal temperature. These results suggest a major role for the sympathetic nervous system and renal factors in the blood pressure response to PGF2alpha-i.c.v. These systems are also involved in the respiratory and temperature changes induced by i.c.v. injection of PGF2alpha. 22 references. (Author abstract)

001223 Feuerstein, Giora; Jimerson, David C.; Kopin, Irwin J. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Effect of prostaglandins on plasma catecholamines, heart and blood pressure responses to hemorrhage. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 21 p.

The effects of prostaglandins (PGE2 and 16,16-dimethyl-PGE1) on epinephrine (EPI) and norepinephrine (NE) release, in response to a hypotensive stimulus (bleeding, 5ml/300g), were studied in relation to blood pressure and heartrate response in the rat. PGE2 (10mcg/kg per min) and 16,16-dimethyl-PGE1 (1mcg/kg per min) accelerated blood pressure and heartrate recovery rate following acute hemorrhage and increased plasma EPI and NE levels. Plasma levels of 3-methoxy,4-hydroxphenylglycol (MHPG) and 3,4-dihydroxyphenylglycol (DHPG) were not affected by PG infusion. In bilaterally nephrectomized rats, PGE2 increased plasma levels of EPI, NE, and DHPG, but failed to enhance the blood pressure and had only a mild effect on heartrate recovery following bleeding. These studies indicate that in the intact rat, administered PGEs potentiate the release of EPI and NE and facilitate blood pressure and heartrate recovery following acute hemorrhage. The hemodynamic effects of the PGEs appear to be mediated by a renal factor whereas the effects of PGEs on EPI and NE response to hemorrhage are independent of the presence of intact kidneys. 26 references. (Author abstract)

001224 Feuerstein, Giora; Yamaguchi, Isamu; Kopin, Irwin J. Laboratory of Clinical Science, NIMH, Bldg.10, 2D-46, Bethesda, MD 20205 **Effect of GABA agonist and antagonists on cardiovascular and sympathetic responses in SHR and WKY rats. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 15 p.

Data are presented to show that spontaneously (genetic) hypertensive (SHR) rats differ from the normotensive WKY rats in the reactivity of GABAergic responses in cardiovascular centers which also modulate the peripheral sympathetic tone. Injection of muscimol (4mg/kg, i.a.) to unanesthetized SHR rats reduced the arterial blood pressure and heartrate more than in WKY rats. These cardiovascular responses were accompanied by a moderate increase in plasma norepinephrine (NE) level and a marked increase in plasma epinephrine level in the SHR rats. In the WKY rats, only a moderate increase in plasma epinephrine level was seen. Injection of subconvulsive doses of picrotoxin (2mg/kg, i.a.) or bicuculline (1mg/kg, i.a.) to SHR rats, elicited a higher and a more prolonged increase of the arterial blood pressure than in WKY rats. Plasma NE and epinephrine levels increased to the same extent in both the SHR and WKY rats following picrotoxin injection. 25 references. (Author abstract modified)

001225 Finnerty, Edward P.; Chan, Samuel H. H. Dept. of Life Sciences, Indiana State University, Terre Haute, IN 47809 **Glycine enhancement of caudate neuronal activities: relationship with the dopaminergic nigrostriatal pathway.** European Journal of Pharmacology. 67(4):477-479, 1980.

Microinjection of glycine into the substantia nigra zona compacta (SNC) of lightly anesthetized male rats markedly decreased the spontaneous discharge of SNC neurons but enhanced activity in the caudate nucleus (CN). The glycine-induced nigral inhibition and caudate excitation were dissociated in animals pretreated with haloperidol; SNC neurons were suppressed, but no change in CN firing was detected. It is suggested that glycine may act as an inhibitory transmitter on cells of origin of the nigrostriatal pathway. 10 references. (Author abstract modified)

001226 Fitzgerald, Maria; Woolf, Clifford J. Dept. of Anatomy, University College London, Gower Street, London WC1E 6BT, England **The stereospecific effect of naloxone on rat dorsal horn neurones; inhibition in superficial laminae and excitation in deeper laminae.** Pain. 9(3):293-306, 1980.

The effect of systemic naloxone on the activity evoked by C-fiber stimulation in dorsal horn neurons of the rat spinal cord was investigated. Recordings were made in unanesthetized, decerebrate spinalized rats. Fifteen units were recorded from laminae 4 and 5 of the dorsal horn, 11 of these units were excited by naloxone. Of 17 units recorded in substantia gelatinosa of the

dorsal horn, 13 were inhibited by the naloxone. The stereoisomer of naloxone, ()naloxone which is inactive in opiate receptor binding tests, failed to produce the same changes found with (-)naloxone in 17 units. These results show a differential effect of naloxone on neurons in the dorsal horn which respond to C-fiber input. Units in the substantia gelatinosa are inhibited while units in deeper laminae are excited by naloxone. These effects are likely to be mediated by the blockade of endogenous opioids in the spinal cord. 45 references. (Author abstract modified)

001227 Fonlupt, Pierre; Roche, Maurice; Andre, Annie-Claire; Cronenberger, Lucien; Pacheco, Henri. Lab. de Chimie Biologique, Bat. 406, Institut National des Sciences Appliquees, 20 Avenue Albert Einstein, F-69621 Villeurbanne, France **/Anticonvulsant properties of S-adenosyl-L-homocysteine./** La S-adenosyl-L-homocysteine: 2. Anticonvulsivante. Canadian Journal of Physiology and Pharmacology. 58(5):493-498, 1980.

S-adenosyl-L-homocysteine (SAH) was found to decrease the epileptiform discharges induced by hippocampal stimulation. SAH reduces the pentetrazol convulsions, does not modify picrotoxine convulsions, and increases strychnine toxicity. These effects are not linked to GABA metabolism perturbation or to the concentration of some amino acids known for their action in synaptic transmission. 25 references. (Author abstract modified)

001228 Fontaine, Jeanine; Reuse, Jean. Laboratory of Pharmacology, Institute of Pharmacy, University of Brussels, Campus Plaine 205/7, 1050 Brussels, Belgium **The effects of substituted benzamides on frog rectus abdominis.** European Journal of Pharmacology. 68(1):55-60, 1980.

The substituted benzamides metoclopramide, bromopride, tiapride, and sulpiride significantly increased the sensitivity of the frog rectus abdominis muscle to exogenous acetylcholine (ACh) but not to carbachol. The supersensitivity to ACh could be correlated with the anticholinesterase activity of these drugs in frog skeletal muscle homogenates. Sultopride, like procainamide, showed only inhibitory effects on responses of the rectus abdominis to ACh and had no acetylcholinesterase activity. 13 references. (Author abstract modified)

001229 Forrest, I. S.; Green, D. E.; Blum, A.; Serra, M. T.; Loeffler, K. O. V.A. Medical Center, 151F, Palo Alto, CA 94304 **Studies on thioridazine and mesoridazine metabolism. II. In vivo metabolism of tritiated drugs in rhesus monkeys.** Communications in Psychopharmacology. 3(5):323-327, 1979.

Serum and plasma protein binding of thioridazine was greater than that of mesoridazine in chronically dosed rhesus monkeys studied in vivo, which confirms previous in vitro findings. Total excretion of tritiated drugs for a 10-day period was 64 to 76% for thioridazine and 83 to 92% for mesoridazine, with fecal excretion two to four times greater than urinary drug excretion. The greater and more rapid excretion of mesoridazine appears to reflect lesser overall tissue absorption of the drug or less extensive enterohepatic cycling. 2 references. (Author abstract modified)

001230 Forsman, A.; Ohman, R. Psychiatric Dept. III, Lillhagen's Hospital, University of Goteborg S-422 03 Hisings Backa, Sweden **Interindividual variation of clinical response to haloperidol.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 949-954).

Research on the pharmacokinetic and pharmacodynamic background of observed intraindividual differences in clinical response to haloperidol, a low dose neuroleptic of the butyrophenone type, was investigated in healthy volunteers. The dose and serum concentrations, bioavailability, distribution and elimination, metabolism, free and bound fractions, interaction with other drugs, variation in steady-state concentration, therapeutic concentrations, and responsiveness of central neurones of haloperidol are discussed. No simple relationship between haloperidol pharmacokinetics and clinical response was demonstrated, probably due to the wide range of variation in pharmacodynamic parameters. Individualized adequate drug dosage appears to be best achieved by continuous clinical observations of response, yet, the adjustment of dosage according to a readily assessed pharmacodynamic parameter may prove valuable in the future (especially in long-term treatment with neuroleptics). Prolactin may be such a parameter, at least in managing some strictly selected psychiatric patients receiving certain antipsychotic drugs. 14 references. (Author abstract modified)

001231 Foster, David O.; Depocas, Florent; Zaror-Behrens, Gloria; Frydman, M. Lorraine; Lacelle, Suzanne. Division of Biological Sciences, National Research Council of Canada, Ottawa, Ontario, Canada K1A OR6 **Effects of rate of blood flow on fractional extraction and on uptake of infused noradrenaline by brown adipose tissue in vivo.** Canadian Journal of Physiology and Pharmacology. 58(10):1212-1220, 1980.

The rate of blood flow (Q) to interscapular brown adipose tissue (IBAT) and the arteriovenous difference in plasma noradrenaline (NA) across the tissue were measured in warm acclimated (WA) or cold acclimated (CA) rats during infusion of NA and in the period of steady calorigenic response associated with steady concentration of NA in arterial plasma (A/NA). A/NA was linearly related to the dose of NA. Calorigenic response, percentage of cardiac output to IBAT, and Q per gram of IBAT were sigmoid function of A/NA and at their maxima were about 2.5 times greater in CA than in WA rats. The rate of uptake of NA by IBAT increased with A/NA and Q, each of which had a major influence on rate, but the coefficient of extraction of NA by the tissue declined. Measurements in rats given a dose of propranolol that partially inhibited the NA-induced increase in Q to IBAT indicated that the decline in the coefficient of extraction of NA by the tissue was attributable primarily to the increase in Q rather than to increasing saturation of uptake mechanisms. Diffusion limited extraction of NA is the probable basis for the effect of Q on that coefficient of extraction. Possible implications of flow dependent extraction of NA in studies involving measurements of the uptake of exogenous NA by tissues or organs are discussed. 29 references. (Author abstract modified)

001232 Frances, Henriette; Lecrubier, Yves; Simon, Pierre. Faculte de Medecine Pitie Salpetriere, Dept. de Pharmacologie, Paris, France **Isolation increases the responses to beta-adrenergic stimulation in mice.** Biological Psychiatry. 15(6):965-969, 1980.

The effect of the beta-adrenergic stimulant, salbutamol, on oxotremorine and apomorphine-induced hypothermia was compared in mice maintained in isolation and others kept in groups. The effect of salbutamol was greater in socially-isolated mice than in group housed controls, which may be indicative of an increase in either the number or affinity of possibly central beta-adrenergic receptors in these animals. This view is substantiated by previous studies showing CNS biochemical alterations as concomitants of prolonged isolation. It is proposed that isolation could provide a simple model for the induction of hypersensitivity of beta-adrenergic receptors without the use of any drugs. 23 references.

001233 Freed, William J.; Taylor, Stephen P.; Luchins, Daniel J.; Wyatt, Richard Jed; Gillin, J. Christian. Lab. of Clinical Psychopharmacology, Intramural Research Program, NIMH, St. Elizabeth's Hospital, Washington, DC 20032 **Production of convulsions in mice by the combination of methionine and homocysteine.** Psychopharmacology. 69(3):275-280, 1980.

The mechanism of action of the behavioral effects of methionine was investigated by assessing the convulsant properties of methionine in mice. Methionine alone did not induce convulsions when administered by various routes in dosages of 250mg/kg to 13,000mg/kg, although larger doses of methionine decreased behavioral activity. However, methionine pretreatment enhanced convulsions in animals challenged with subconvulsive dosages of homocysteine. Pentylenetetrazol was less effective than homocysteine in promoting convulsions in methionine pretreated animals. Although the convulsive effects of methionine were not shared by other natural amino acids (glutamate, aspartate, cysteine, tryptophan and others), ethionine convulsions almost as effectively as did methionine. Methionine thus promotes convulsions under certain conditions, perhaps due to an accumulation of homocysteine or of other metabolites with convulsive properties. 29 references. (Author abstract modified)

001234 Fry, J. P.; Herz, A.; Zieglgansberger, W. Dept. of Physiology, University College London, Gower St., London WC1E 6BT, England **A demonstration of naloxone-precipitated opiate withdrawal on single neurones in the morphine-tolerant/dependent rat brain.** British Journal of Pharmacology. 68(3):585-592, 1980.

Naloxone was applied microelectrophoretically to single neurons in the frontal cerbral cortex and striatum of naive and morphine dependent/tolerant Sprague-Dawley rats. Naloxone had no effect on most cells tested in naive rats, but a few showed nonspecific depression. A higher proportion of neurons in morphine tolerant/dependent rats responded to naloxone; some showed nonspecific inhibition, but others had stereospecific excitatory response, in which activity evoked by L-glutamate or acetylcholine was increased. It is suggested that the excitatory responses to naloxone represent opiate withdrawal responses at the single neuron level and reflect a latent hyperexcitability of the postsynaptic membrane in morphine tolerance and dependence. 33 references. (Author abstract modified)

001235 Fry, J. P.; Zieglgansberger, W.; Herz, A. Zieglagansberger: Dept. of Neuropharmacology, Max-Planck-Institut fur Psychiatrie, Kraepelinstrasse 2, D-8000 Munich 40, West Germany **Development of acute opioid tolerance and dependence in rat striatal neurones.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):145-149, 1980.

Striatal neurons in male Sprague-Dawley rats frequently developed tachyphylaxis to the specific, naloxone antagonizable, depressant effects of methionine enkephalin and leucine enkephalin on spontaneous and L-glutamate-evoked activity. The loss of responsiveness to the enkephalins appeared to be associated with dependence on the opioids, since withdrawal-like hyperactivity was observed when peptide application was terminated or when naloxone was applied. 36 references. (Author abstract modified)

001236 Fukumori, Ryuji; Minegishi, Akemi; Satoh, Tetsuo; Kitagawa, Haruo; Yanaura, Saizo. Satoh: Dept. of Biochemical Pharmacology, Faculty of Pharmaceutical Sciences, Chiba University, Yayoi-cho, Chiba, Japan **Tryptophol-induced change in brain 5-hydroxytryptamine metabolism.** Psychopharmacology. 69(3):243-246, 1980.

The effects of tryptophol (TOL) on brain 5-hydroxytryptamine (5-HT) metabolism were studied. After TOL injection, brain 5-HT and 5-hydroxyindoleacetic acid (5-HIAA) levels were increased, 5-HT synthesis rate was decreased, and monoamine oxidase (MAO) activity remained unchanged. Pretreatment of mice with p-chlorophenylalanine (PCPA), a potent inhibitor of 5-HT synthesis, did not affect the anticonvulsant action of TOL. These results suggest that alteration of 5-HT metabolism after TOL injection is not directly related to the anticonvulsant action of TOL. 18 references. (Author abstract modified)

001237 Fuller, Ray W.; Kaiser, Carl. Lilly Research Laboratorie, Indianapolis, IN 46285 **Effect of 2-(p-chlorophenyl)cyclopropylamine on 5-hydroxyindole concentration and monoamine oxidase activity in rat brain.** Biochemical Pharmacology. 29(24):3328-3330, 1980.

Studies of a p-chloroamphetamine (PCA) analog similar in structure to N-cyclopropyl-PCA, but with the cyclopropyl group interposed between the p-chlorophenyl group and the amino group, are described. This compound, 2-(p-chlorophenyl)cyclopropylamine (PCCA), manifests none of the serotonin depleting activity of PCA. In contrast to PCA, PCCA causes pronounced and long-lasting (hence presumably irreversible) inhibition of monoamine oxidase, the inhibition being even greater than that produced by N-cyclopropyl-PCA at an equimolar dose. PCCA is thus a PCA analog for which only monoamine oxidase inhibition is apparent in its in vivo actions on serotonin neurons. 6 references.

001238 Fuxe, K.; Ogren, S.-O.; Agnati, L. F.; Andersson, K.; Hall, H.; Kohler, C.; Fredholm, B. Dept. of Histology, Karolinska Institute, S-104 01, Stockholm, Sweden **Central monoamine synapses as sites of action for ergot drugs.** Advances in Biochemical Psychopharmacology. 23:41-62, 1980.

The effects of several ergot drugs on central monoaminergic mechanisms were studied in male Sprague-Dawley rats and NMRI mice. Acute treatment with lergotrile and bromocriptine blocked apomorphine-induced locomotion and rearing, suggesting the two ergot drugs blocked postsynaptic dopamine (DA) receptors in the nucleus accumbens. Several ergot drugs showed high affinity for some 3H-ADTN binding sites, which are believed to be postsynaptic DA receptors. Bromocriptine and the DA agonist (5R, 8R, 10R)-8-(cyanomethyl)-6-methylergoline (CM-29-712) increased norepinephrine (NE) turnover in periventricular and paraventricular hypothalamic areas, suggesting a blockade of NE receptors. CM-29-712 also increased DA turnover in the medial palisade zone of the median eminence. Some ergot drugs also had affinity for serotonin receptor sites. Apomorphine and bromocriptine displaced in vivo 3H-spiperone binding in the hypothalamus, septal area, and substantia nigra, but not in striatum. Subacute teatment with bromocriptine and CM-29-712 enhanced apomorphine-induced locomotion, but reduced chewing and licking activity. 36 references.

001239 Fuxe, Kjell; Andersson, Kurt; Locatelli, Vittorio; Agnati, Luigi F.; Hokfelt, Tomas; Skirboll, Lana; Mutt, Victor. Dept. of Histology and Biochemistry, Karolinska Institutet, Stockholm, Sweden **Cholecystokinin peptides produce marked reduction of dopamine turnover in discrete areas in the rat brain following interaventricular injection.** Europoean Journal of Pharmacology. 67(2/3):329-331, 1980.

Intraventricular administration of the cholecystokinin peptides CCK-7 and CCK-8 produced a marked reduction in dopamine (DA) turnover in discrete parts of the caudate nucleus and in the anterior part of the nucleus accumbens. No changes were observed in the dotted DA terminals in the posterior part of the nucleus accumbens or in the tuberculum olfactorium. CCK-39, a possible precursor of CCK-7 and CCK-8 was less potent than the smaller peptide fragments. 5 references.

001240 Fuxe, Kjell; Ogren, Sven-Ove; Hall, Hakan; Agnati, Luigi F.; Andersson, Kurt; Kohler, Christer; Schwarcz, R. Dept. of Histology, Karolinska Institutet, S-104 01 Stockholm, Sweden **Effects of chronic treatment with l-sulpiride and haloperidol on central monoaminergic mechanisms.** Advances in Biochemical Psychopharmacology. 24:193-206, 1980.

Chronic treatment with l-sulpiride and haloperidol for 2 weeks produced behavioral signs of dopamine (DA) receptor supersensitivity in both the striatum and the nucleus accumbens/tuberculum olfactorium region. Thus, 48 hours after treatment, apomorphine-induced locomotion, total activity, and rearing activity were significantly enhanced. These behavioral results were correlated with 10% increase in the number of binding sites for the DA agonist 3H-ADTN and the DA antagonist 3H-spiperone in striatum, but the latter sites appeared to be markedly increased in number in the subcortical limbic region. A marked loss of stereoselectivity was demonstrated in the 3H-ADTN binding site, a change that could also be involved in producing the signs of enhancement of DA effector mechanisms observed. A corresponding loss of stereoselectivity was not observed in the 3H-spiperone binding site to which, instead, the ()-butaclamol had an increased affinity. Haloperidol, but not l-sulpiride, in the dosages used produced a further enhancement of degeneration-induced supersensitivity at DA receptor sites. 19 references. (Author abstract modified)

001241 Gahwiler, B. H. Preclinical Research, Pharmaceutical Division, Sandoz Ltd., CH-4002 Basel, Switzerland **Excitatory action of opioid peptides and opiates on cultured hippocampal pyramidal cells.** Brain Research. 194(1):193-203, 1980.

The effects of enkephalin on the spontaneous and evoked activity of hippocampal pyramidal cells were examined in organotypic cultures prepared from 5 to 7-day-old rats. Bath applications of low concentrations of opioid peptides and higher concentrations of opiates increased the amplitude and duration of excitatory postsynaptic potentials of pyramidal cells and induced long-lasting depolarization shifts. These effects were antagonized by naloxone. Synaptic isolation of cells by exposure to elevated concentrations of extracellular magnesium abolished spiking and synaptic activity and obliterated peptide effects on pyramidal cells, although the cells were still excited by glutamate. Opioid peptides had no detectable effect on resting membrane potential and on input resistance of penetrated cells. Experiments in which pyramidal cells were synaptically activated by field stimulation provided direct evidence for a disinhibitory action of the peptides. 38 references. (Author abstract modified)

001242 Gaide, M. S.; Klose, K. J.; Gavin, W. J.; Schneiderman, N.; Robertson, T. W.; Silbret, M.; Faletti, M. V. Dept. of Pharmacology (R189), University of Miami School of Medicine, P. O. Box 016189, Miami, FL 33101 **Hexamethonium modification of cardiovascular adjustments during combined static-dynamic arm exercise in monkeys.** Pharmacology Biochemistry and Behavior. 13(6):851-857, 1980.

Hexamethonium modification of heartrate and blood pressure changes in rhesus monkeys during a specific exercise task which approximates the exertion of barbell lifting or rowing in humans (pulling a T-bar). Each animal received eight daily test sessions in which loads, total pulls, and alternate sessions of pulling after injection of hexamethonium chloride or saline were factorially combined. Data indicate that heartrate in this model is primarily influenced by the duration of the dynamic exercise component (number of pulls), while both dynamic and static components affect systolic and diastolic blood pressures. After ganglionic blockade, heartrate and diastolic pressure do not change appreciably during T-bar pulling while the rise in systolic pressure is attenuated and varies primarily as a function of the static exercise component. Clinical implications of the data are discussed. 26 references. (Author abstract modified)

001243 Gale, Karen. Dept. of Pharmacology, Georgetown University Schools of Medicine and Dentistry, Washington, DC 20007 **Effects of chronic neuroleptic treatment on tyrosine hydroxylase in dopaminergic terminals: comparisons between drugs and brain regions reveals different mechanisms of tolerance.** Advances in Biochemical Psychopharmacology. 24:23-29, 1980.

The mechanisms of tolerance produced by chronic administration of various neuroleptic drugs were investigated in various brain regions. The lack of cross-tolerance between haloperidol and clozapine with respect to kinetic changes in tyrosine hydroxylase (TH), and the cross-tolerance among thioridazine, chlorpromazine, and haloperidol are described. Tolerance observed in the limbic nuclei was found to disappear more rapidly than that obtained in the caudate. It is concluded that different mechanisms of action are associated with variations in neuroleptic drugs and brain regions. The possibility that clozapine may exert no effect on dopamine receptors is noted. 22 references.

001244 Galvan, M.; Grafe, P.; ten Bruggencate, G. Psysiologisches Institut der Universitat Munchen, Pettenkoferstrasse 12, D-8000 Munich 2, West Germany **Presynaptic actions of 4-aminopyridine and gamma-aminobutyric acid on rat sympathetic ganglia in vitro.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(2):141-147, 1980.

Responses to bath applications of 4-aminopyridine (4-AP) and GABA were recorded intracellularly from neurons in the Wistar rat isolated superior cervical ganglion. Generally, 4-AP (0.1 to 1.0mmol/1) induced spontaneous action potentials and excitatory postsynaptic potentials (EPSPs), which were blocked by hexamethoxnium. Membrane potential was unchanged and spike duration was slightly increased. In 4-AP solution (0.1 to 0.3mmol/1), GABA (0.1mmol/1), 3-aminopropanesulphonic acid, and muscimol each evoked bursts of spikes and EPSPs in addition to neuronal depolarization. These bursts were completely antagonized by hexamethonium, tetrodotoxin, or bicuculline methochloride. 34 references. (Author abstract modified)

001245 Gibson, Alan; Hart, Stephen L.; Shabib, Amel. Dept. of Pharmacology, Chelsea College, University of London, Manresa Road, London SW3 6LX, England **Leucine-enkephalin and methionine-enkephalin produce opposing effects on plasma corticosterone levels in ether-stressed mice.** British Journal of Pharmacology. 70(4):509-511, 1980.

Met-enkephalin reduced the inhibitory effect of intracerebroventricularly administered saline on the plasma corticosterone response to ether stress in male albino mice. However, leu-enkephalin enhanced the inhibitory effect of saline. When given together, the two peptides counteracted each other. Results suggest that the two enkephalins subserve different physiological functions in the response of the hypothalamus/pituitary/adrenal system to stress. 10 references. (Author abstract modified)

001246 Glossmann, Hartmut; Hornung, Rainer. Rudolf Buchheim-Institut fur Pharmakologie, Frankfurter Strasse 107, D-6300 Giessen, West Germany **Alpha2 adrenoceptors in rat brain: the divalent cation site.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(2):101-109, 1980.

The potentiation of 3H-clonidine binding to alpha2-adrenoceptors in Sprague-Dawley rat brain by magnesium and other divalent cations was examined. Results suggested that alpha2-adrenoceptors are in a dynamic equilibrium that is affected by agonists, divalent and monovalent cations, guanyl nucleotides, and temperature. Four conformations of alpha2-adrenoceptors were identified by their affinity for agonists and may represent free receptors as well as complexes of receptors with membrane coupling factors or effector proteins. 14 references. (Author abstract modified)

001247 Glyn, J. R.; Lipton, J. M. Lipton: Dept. of Physiology, University of Texas Health Science Center at Dallas, 5323

Harry Hines Blvd., Dallas, TX 75235 **Central administration of serine causes hypothermia and inhibits fever in rabbits.** Brain Research Bulletin. 5(6):653-660, 1980.

When serine, a precursor of taurine, was injected into the lateral cerebral ventricle (ICV), it was found to cause dose-related decreases in rectal temperature of rabbits in a cold environment (10 degrees C) but had little effect in a thermoneutral environment or in the heat (30 degrees C). Induction of fever by IV leukocytic pyrogen was inhibited by serine given icv in a single injection, in two injections 30 min apart, or when infused for one hour in a thermoneutral environment; a single injection also inhibited fever in the heat. When serine and taurine were injected together icv in a cold environment, the reductions in body temperature were consistent with an additive action of the two amino acids. Serine appears to inhibit activity in central pathways which mediate both heat production and heat conservation, possibly at the same receptor sites as taurine. Unlike taurine, however, serine infusion does not augment and prolong fever when infusion is stopped and it is unlikely that this amino acid influences inactivation of endogenous pyrogen that reaches the brain. 20 references. (Author abstract modified)

001248 Glyn, J. R.; Lipton, J. M. Lipton: Dept. of Physiology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235 **Comparison of the effects of central administration of serine and glycine on body temperature of the rabbit.** Brain Research Bulletin. 5(6):661-665, 1980.

To assess the possibility that serine effects on body temperature regulation in the rabbit are due to the conversion of serine to glycine, glycine was administered centrally to see if its effects on body temperature are similar to those of serine. Intracerebroventricular injections of glycine caused dose-related decreases in body temperature in a 10 degree C environment but had no significant effect at 23 degrees C. Glycine delayed the normal rise in temperature in a 30 degree C environment and reduced leukocytic pyrogen (LP) fever and prostaglandin E2 (PGE2) hyperthermia. Glycine and serine in combination were, however, subadditive in producing hypothermia, which suggests that these amino acids act at different central sites. A difference in the interaction of serine and glycine with strychnine in producing hypothermia also suggests that the action of serine is not entirely mediated by glycine. The subadditivity data and the difference in temperature effects when the amino acids are given with strychnine suggest that serine and glycine probably have separate central sites of action. 13 references. (Author abstract modified)

001249 Gnegy, M. E.; Lau, Y. S. Dept. of Pharmacology, University of Michigan Medical School, Ann Arbor, MI 48109 **Calmodulin release from striatal membranes after acute and chronic treatment with butaclamol.** Advances in Biochemical Psychopharmacology. 24:147-151, 1980.

The effects of chronic and acute treatment with an active antipsychotic drug and dopamine (DA) antagonist, ()-butaclamol and its inactive isomer (-)-butaclamol on calmodulin release in rat striata were investigated. Either acute or chronic treatment with the active antipsychotic drug ()-butaclamol was found to impair the ability to calmodulin to be released from the membranes. Thus, in supersensitive animals, the continual decrease of release could lead to an accumulation of calmodulin in membranes, which may be related to the increased basal and DA sensitive adenylate cyclase activity found in these membranes. The altered calmodulin release is most likely due to a dopaminergic blocking effect, since both chronic and acute treatment with (-)-butaclamol failed to produce those changes as seen in the ()-butaclamol animals. Therefore, a specific DA effect is demonstrated because (-)-butaclamol neither blocks DA receptors, nor inhibits DA sensitive adenylate cyclase activity and will not produce behavioral supersensitivity to apomorphine. 20 references.

001250 Gold, Paul E.; Delanoy, Richard L. Dept. of Psychology, 102 Gilmer Hall, University of Virginia, Charlottesville, VA 22901 **ACTH modulation of memory storage processing. (Unpublished paper).** Research Report, NIMH Grant 5RO1-MH-31141, 1980. 35 p.

The effects on memory of posttraining injections of adrenocorticotropic hormone (ACTH) are reviewed, and potential neurobiological mechanisms underlying the role of ACTH im memory storage are described. If administered shortly after training, injections of ACTH can enhance or impair later retention of avoidance training and these effects on memory storage are time dependent. It is suggested that ACTH may act on memory through two parallel central nervous system actions. First, ACTH may act on individual neurons to regulate neurophysiological responses to other inputs and, second, ACTH release may potentiate the release of central norepinephrine. The neurobiological actions of the two agents, ACTH and norepinephrine, may act together to enhance and to maintain the neuronal representation of recent experiences. 83 references. (Author abstract modified)

001251 Gold, Paul E.; McCarty, Richard; Sternberg, Debra B. Dept. of Psychology, Gilmer Hall, University of Virginia, Charlottesville, VA 22901 **Peripheral catecholamines and memory modulation. (Unpublished paper).** Research Report, NIMH Grant 5ROI-MH-31141, 1980. 24 p.

Findings from a series of studies on memory processing in rats, which support the view that endogenous peripheral catecholamine responses to training are important modulators of memory processing, are presented. The studies show that: 1) plasma catecholamines are responsive to training and to treatments that affect memory; 2) peripheral posttraining epinephrine injections can enhance or impair later retention performance; 3) peripheral injections of adrenergic receptor antagonists attenuate the retrograde amnesias produced by supraseizure electrical stimulation of the brain. 17 references. (Author abstract modified)

001252 Goldberg, Leon I.; Kohli, Jai D. Dept. of Pharmacological and Physiological Sciences, University of Chicago, 947 East 58th St., Chicago, IL 60637 **Peripheral pre- and post-synaptic dopamine receptors: are they different from dopamine receptors in the central nervous system?** Communications in Psychopharmacology. 3(6):447-456, 1979.

Properties of peripheral and central dopamine (DA) receptors are compared. Peripheral DA receptors can be classified as DA1 postsynaptic receptors on vascular smooth muscle and as DA2 presynaptic receptors on the sympathetic neuron. Agonists active on the peripheral DA1 receptor are similar to those active in stimulating DA sensitive adenylate cyclase in the CNS, but there is no correlation in the activity of DA antagonists in the two systems. Binding assays have not revealed consistent parallels between central and peripheral DA receptors. 56 references. (Author abstract modified)

001253 Golds, P. R.; Przyslo, F. R.; Strange, P. G. Dept. of Biochemistry, University Hospital and Medical School, Queen's Medical Centre, Nottingham NG7 2UH, England **The binding of some antidepressant drugs to brain muscarinic acetylcholine receptors.** British Journal of Pharmacology. 68(3):541-549, 1980.

The binding of antidepressant drugs, including some new drugs of atypical structure (flupenthixol, iprindole, maprotiline,

mianserin, nomifensin, tofenacine, and viloxazine) to muscarinic acetylcholine receptors in male Wistar rat brain was studied. Many of the drugs were potent displacers of (3H)-atropine. Some correlation was found between the affinity for binding to muscarinic receptors and the incidence of anticholinergic side-effects in clinical usage. 35 references. (Author abstract modified)

001254 Goldstein, Menek; Lew, Jow Y.; Sauter, Andre; Lieberman, Abraham. Dept. of Psychiatry, New York University Medical Center, New York, NY 10016 **The affinities of ergot compounds for dopamine agonist and dopamine antagonist receptor sites.** Advances in Biochemical Psychopharmacology. 23:75-82, 1980.

Research on the interaction of ergot compounds, such as bromocriptine and pergolide, with dopamine (DA) receptors is reviewed. Receptor binding studies indicate that ergot compounds act as mixed agonists/antagonists at DA receptors. Guanosine triphosphate does not significantly inhibit the displacement potency of bromocriptine, which has a high affinity for DA antagonist sites, but reduces the displacement potency of pergolide, which has a high affinity for DA agonist sites. Exposure of striatal membranes to high temperatures results in inactivation of DA agonist binding sites and decreases the displacement potency of pergolide, but does not alter the binding potency of bromocriptine. It is suggested that pergolide may have a high affinity for intrastriatal postsynaptic DA receptors, while bromocriptine has a high affinity for corticostriatal presynaptic DA receptors. 21 references.

001255 Goldstein, Menek; Saito, Masashi; Lew, Jow Y.; Hieble, J. Paul; Pendleton, Robert G. New York University Medical Center, Dept. of Psychiatry, Neurochemistry Laboratories, New York, NY 10016 **The blockade of alpha2-adrenoceptors by the PNMT inhibitor SK&F 64139.** European Journal of Pharmacology. 67(2/3):305-308, 1980.

The phenylethanolamine N-methyltransferase (PNMT) inhibitor 7,8-dichloro-1,2,3,4-tetrahydroisoquinoline and an analog with no PNMT inhibitory activity, 5,8-dimethoxy-1,2,3,4-tetrahydroisoquinoline, inhibited 3H-clonidine binding to rat cerebral cortical membrane homogenates. Studies in the isolated guinea-pig atrium indicated that these compounds were alpha2-adrenoceptor antagonists. The PNMT inhibitor 1,2,3,4-tetrahydroisoquinoline-7-sulfonamide was inactive in both tests. 10 references. (Author abstract modified)

001256 Golembiowska-Nikitin, Krystyna; Pilc, Andrzej; Vetulani, Jerzy. Vetulani: Dept. of Biochemistry, Institute of Pharmacology, Polish Academy of Sciences, 31-343 Krakow, Poland. **Opiates and specific receptor binding of (3H)clonidine.** Journal of Pharmacy and Pharmacology. 32(1):70-71, 1980.

The specific binding of 3H-clonidine to rat cortical synaptosomes was not displaced by enkephalinamide, morphine, or naloxone. Azidomorphine and N-cyclopropylmethylnorazidomorphine were weak displacing agents. Results indicate that the interaction between opiates and the noradrenergic system does not result from actions at a common receptor. 11 references.

001257 Gordon, Adrienne S.; Milfay, Dale; Diamond, Ivan. Diamond: Dept. of Neurology, 794-M, University of California, San Francisco, School of Medicine, San Francisco, CA 94143 **Phosphorylation of the membrane-bound acetylcholine receptor: inhibition by diphenylhydantoin.** Annals of Neurology. 5(2):201-203, 1979.

The inhibition by diphenylhydantoin (DPH) of phosphorylation of the membrane-bound acetylcholine receptors (AChR) was investigated. DPH was found to interact with purified postsynaptic membranes to inhibit phosphorylation of the membrane-bound AChR. DPH appears to alter the availability of postsynaptic membrane proteins for phosphorylation by a synaptic membrane protein kinase. The concentration of DPH that produces half maximal inhibition of AChR phosphorylation is about 0.00005 M. This suggests that one of the specific effects of DPH in the nervous system may be related to inhibition of phosphorylation of postsynaptic membrane proteins. 9 references. (Author abstract modified)

001258 Gothert, M. Pharmakologisches Institut der Universitat Essen, Hufelandstrasse 55, D-4300 Essen 1, West Germany **Serotonin-receptor-mediated modulation of Ca-dependent 5-hydroxytryptamine release from neurones of the rat brain cortex.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(3):223-230, 1980.

The effects of methiothepin and metergoline on stimulated release of tritium from male Wistar rat brain cortex slices preincubated with triated 5-hydroxytryptamine (5-HT) were examined. Results indicate that methiothepin facilitated stimulated tritium overflow by competitive blockade of presynaptic inhibitory 5-HT. Metergoline did not significantly increase tritium overflow, indicating it did not cause a substantial blockade of 5-HT autoreceptors. Methiothepen appeared to act by decreasing the availability of calcium ions for stimulus/release coupling, probably by decreasing the affinity of the voltage sensitive permeability channel of the cell membrane for calcium ions. 28 references. (Author abstract modified)

001259 Greenberg, Stan; Curro, Frederick; Palmer, Gene C.; Palmer, Shelby Jo; Darda, Sigfried; Hoefke, Wolfgang. Dept. of Pharmacology, College of Medicine, University of South Alabama, Mobile, AL 36688 **Possible involvement of cyclic AMP and frontal cortex in amitriptyline mediated suppression of the hypotensive effect of clonidine.** Life Sciences. 27(25&26):2669-2674, 1980.

The possible involvement of cyclic AMP and frontal cortex in amitriptyline-mediated suppression of the hypotensive effect of clonidine was investigated. The amitriptyline-mediated suppressive effect was not due to physiologic antagonism since amitriptyline did not affect the blood pressure or heartrate of conscious Wistar rats. Amitriptyline did not alter the plasma levels or cerebral cortical and brainstem accumulation of N-2-C14-clonidine but suppressed norepinephrine sensitive cyclic AMP accumulation in slices of frontal cortex. Norepinephrine stimulated cyclic AMP accumulation in slices of frontal cortex. Norepinephrine stimulated cyclic AMP accumulation was restored to normal values when tested in slices of frontal cortex obtained from Wistar rats refractory to the cardiovascular actions of clonidine. These effects did not occur in slices of medulla pons. The data strongly support the postulate that amitriptyline mediated suppression of the cardiovascular action of clonidine may occur at higher centers of the brain (frontal cortex) and not in the medulla. 25 references. (Author abstract modified)

001260 Griauzde, Mindaugas Leon. University of Illinois at the Medical Center **The effect of emotional stress and diazepam on monoamine metabolites in the cerebrospinal fluid of cats. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1332-B, 1980. Ann Arbor, Univ. Microfilms No. 8021316, 120p., 1980.

The effects of emotional stress and diazepam (DZ) on monoamine metabolites in CSF were investigated in the cat. Results show that DZ (.3mg/kg to 1.5mg/kg) produced a significant increase in short wave sleep, peaking at a dose of .9mg/kg; increased doses of DZ decreased short wave sleep. No significant changes were found in paradoxical sleep, rectal temperature, ho-

movanillic acid (HVA), or 5-hydroxyindole-3-acetic acid (5HIAA), suggesting a possible mode of action for DZ mediated through a mechanism independent of normal sleep pathways. Exposure to a stressful situation resulted in a 63% increase in 5-HIAA and a 77% increase in HVA, indicating an increased turnover to serotonin (5HT) and dopamine (DA). Cats subject to a similar stress situation following chronic DZ (.6mg/kg twice daily for 3 days) failed to show any significant increase in 5-HIAA or HVA, indicating suppression of 5HT and DA turnover. Results suggest that DZ treatment attenuates the monoamine response to behavioral stress. (Journal abstract modified)

001261 Guidotti, A. Laboratory of Preclinical Pharmacology, NIMH, St. Elizabeth's Hospital, Washington, DC 20032 **Pharmacological and biochemical evidence for an interaction between the benzodiazepine and GABA receptors.** Advances in Biochemical Psychopharmacology. 21:271-275, 1980.

Pharmacological and biochemical evidence for an interaction between the benzodiazepine and GABA receptors is reviewed. Data are reviewed which indicate that the mode of action of benzodiazepines including the antianxiety activity are mediated via a primary effect on GABAergic transmission. Since benzodiazepines are not GABA mimetics, and since they do not act presynaptically on GABA neurons by modifying the synthesis release or reuptake of GABA. It is concluded that they should act postsynaptically by facilitating the action of GABA at its postjunctional receptors. Studies of the NB2A mouse neuroblastoma clonal cell line, which sought to determine whether in vivo GABA, benzodiazepine recognition sites, GABA-modulin, and the Clionophore are part of a functional supramolecular receptor unit are described. 17 references.

001262 Guidotti, A. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Regulation of tyrosine hydroxylase after chronic treatment with classic and atypical antischizophrenic drugs.** Advances in Biochemical Psychopharmacology. 24:1-8, 1980.

Changes in the kinetic characteristics of tyrosine hydroxylase (TH) were studied in striatum, nucleus accumbens, substantia nigra, and locus coeruleus of rats chronically treated with: 1) haloperidol, chosen as an example of a classic neuroleptic that preferentially interacts with the D1 (dopamine) receptor, the receptor not associated with adenylate cyclase; 2) clozapine, chosen as an example of an atypical neuroleptic that interacts with D2 receptors, the receptors associated with adenylate cyclase; and 3) 1-sulpiride (1-SULP), another atypical neuroleptic that specifically interacts with D1 receptors. Chronic treatment with haloperidol, but not with chronic clozapine, increased the apparent Vmax of TH in locus coeruleus. The changes in Vmax were not associated with changes in affinity for pteridine cofactor. This observation suggests that the number of TH molecules is perhaps increased after chronic haloperidol administration. Results are discussed in relation to clinical effects of these drugs and the molecular basis for development of tolerance to antischizophrenic drugs. 21 references.

001263 Guidotti, A.; Massotti, M.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **GABA-modulin regulates solubilized benzodiazepine and GABA recognition sites. (Unpublished paper).** Washington, DC, NIMH, 1980. 6 p.

New evidence on the mechanism by which partially purified GABA-modulin modifies the binding characteristics of GABA-benzodiazepine recognition sites solubilized from crude synaptic membrane (CSM) is presented, and new data on the inhibition by GABA-modulin of the benzodiazepine binding to specific recognition sites which were purified from CSM are discussed. The observation that GABA-modulin can compete with the benzodiazepines for binding to solubilized benzodiazepine recognition sites in the absence of GABA receptors suggests that this regulatory polypeptide may act as an endogenous ligand for the benzodiazepine receptor. The data strongly suggest that benzodiazepines facilitate GABA receptor function by removing GABA-modulin which is usually reducing the number of high affinity binding sites for GABA by being bound to the benzodiazepine receptors. 11 references.

001264 Haeusler, Guenther; Osterwalder, Rolf. Pharmaceutical Research Dept., F. Hoffmann-La Roche & Co., Ltd., CH-4002 Basel, Switzerland **Evidence suggesting a transmitter or neuromodulatory role for substance P at the first synapse of the baroreceptor reflex.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(2):111-121, 1980.

Injection of substance-P into a lateral brain ventricle of urethane anesthetized male Wistar rats caused dose dependent increases in blood pressure and heartrate. Local application of substance-P to the bulbar nucleus of the solitary tract (NTS) resulted in hypotension and bradycardia. In anesthetized cats, local application of substance-P to the NTS decreased blood pressure, heartrate, and spontaneous sympathetic nerve activity. Additional studies indicated that substance-P may have a transmitter or neuromodulatory role at the first synapse of the baroreceptor reflex in NTS. 46 references. (Author abstract modified)

001265 Hahn, Richard A.; Wardell, Joe R., Jr. Lilly Research Laboratories, Indianapolis, IN 46285 **Antagonism of the renal vasodilator activity of dopamine by metoclopramide.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(2):177-182, 1980.

The interaction of metoclopramide with renal dopamine receptors was studied in anesthetized dogs. Injection or infusion of relatively low doses of dopamine was found to have little effect on alpha or beta adrenoceptors and to produce renal vasodilation without large concomitant alterations of arterial blood pressure or cardiac rate: that low doses of dopamine result in relatively selective effects on the renal vasculature as found in prior investigations, is supported. Results indicated that metoclopramide is an effective antagonist of renal dopamine receptors. This finding is not consistent with the classification of metoclopramide as a selective antagonist of D-2 receptors. 76 references. (Author abstract modified)

001266 Haigh, E.; Young, J. M. Dept. of Pharmacology, University of Cambridge, Hills Road, Cambridge CB2 2QD, England **Persistent effects of high concentrations of chlorpromazine on 3H-propylbenzilylcholine mustard binding to muscarinic receptors in guinea-pig intestinal muscle strips.** Archives Internationales de Pharmacodynamie et de Therapie. 247(1):21-30, 1980.

Low concentrations of chlorpromazine competitively inhibited the binding of 3H-propylbenzilylcholine mustard (3H-PrBCM) to muscarinic receptors in strips of longitudinal muscle from guinea-pig small intestine. Higher concentrations of chlorpromazine produced an inhibition that persisted despite washing for 1 hour. In strips pretreated with chlorpromazine, the inhibition of 3H-PrBCM binding by a muscarinic agonist, carbachol, was altered in a more complex way than that of an antagonist, methylatropinium. 20 references. (Author abstract modified)

001267 Haigler, Henry J.; Spring, Denise D. Dept. of Pharmacology, Emory University, Atlanta, GA 30322 **Substance P, morphine and methionine-enkephalin: effects on spontaneous and evoked neuronal firing in the nucleus reticularis gigantocellularis of the rat.** European Journal of Pharmacology. 67(1):65-74, 1980.

A nociceptive stimulus (foot pinch) produced a significant increase in firing in cells in the nucleus reticularis gigantocellularis (NRGC) and surrounding areas of the male Sprague-Dawley rat brain. Substance-P (SP) produced only infrequent increases in spontaneous neuronal firing after microiontophoretic application to these areas. Similar applications of morphine and methionine-enkephalin rarely affected spontaneous neuronal firing or modified the increase in firing evoked by foot pinch. Results indicate that the NRGC is involved in nociception but the NRGC is not an area where SP, morphine, or enkephalin have direct effects. 32 references. (Author abstract modified)

001268 Hamala, K.; Svorad, D. Institute of Normal and Pathological Physiology, Sienkiewiczova 1, 884 23 Bratislava, Czechoslovakia **Autocorrelation analysis of single neuron activity after administration of pentobarbital.** Activitas Nervosa Superior. 22(3):213-214, 1980.

An autocorrelation analysis of single rat caudate nucleus cell activity following administration of pentobarbital is described. Autocorrelation analysis was performed with digitized pentobarbital data. There appeared regular and irregular oscillations under pentobarbital anesthesia in 83% of neurons. Regular oscillations were present in 32% of neurons. The decrease of an autocorrelation histogram on 1/10 value after pentobarbital was stable in 3% of neurons. The absence of rank order dependent properties of autocorrelation histograms suggests that oscillations under pentobarbital may be generated by a sensitive mechanism. 3 references.

001269 Hamon, M.; Nelson, D. L.; Herbet, A.; Glowinski, J. Groupe NB, INSERM U114, Laboratoire de Neurophysiologie, College de France, F-75231 Paris Cedex 05, France **Multiple receptors for serotonin in the rat brain.** Advances in Biochemical Psychopharmacology. 21:223-233, 1980.

The properties of 3H-serotonin (5-HT) and 3H-spiroperidol binding sites in rat brain were compared with those of the 5-HT sensitive adenylate cyclase, and the existence of multiple receptors for 5-HT in the rat brain is discussed. Evidence is provided which supports the conclusion that 3H-5-HT and 3H-spiroperidol are specific ligands of two different postsynaptic 5-HT receptors. In addition, neither of these two receptors corresponds to that coupled to adenylate cyclase in postsynaptic membranes. Therefore, at least three classes of postsynaptic receptors for 5-HT may exist in rat brain. 30 references.

001270 Hanbauer, I.; Pradhan, S.; Yang, H.-Y. T. Section on Biochemical Pharmacology, NHLBI, NIH, Bethesda, MD 20205 **Role of calmodulin in dopaminergic transmission. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 25p.

The role of calmodulin in dopaminergic transmission is reviewed, and it is shown that calmodulin can be viewed as an important component in the transduction of short-term and long-term stimulation of specific postsynaptic dopamine receptors. Areas covered include: production of immunoglobulins directed toward calmodulin; measurement of calmodulin content in brain tissues by an enzyme linked immunosorbent assay; changes in striatal calmodulin content elicited by stimulation of dopamine receptors; changes in striatal calmodulin content caused by long-term modulation of dopamine receptors; and implications of calmodulin in dopamine receptor function. 28 references.

001271 Harris, J.; Gabay, S. Dept. of Chemistry, Arizona State University, Tempe, AZ 85281 **Possible mode of action of neuropsychiatric agents: phenothiazines and iminodibenzyls.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 929-932).

Evidence on a possible mode of action for neuropsychiatric agents is presented, with emphasis on the influence of phenothiazines and iminodibenzyls on neurotransmitter processes in the rat brain. These drugs produce changes in the endogenous contents of trace metals, such as Cu(II), Zn(II), Mn(II), and Fe (III) in discrete brain regions. X-ray crystallographic analysis of the products from the reaction between CuCl2 and chlorpromazine-HCL or imipramine implicated events at the cell membrane which are affected by anions and are pH dependent. Drugs may be considered as acting on a receptor site directly and/or by ligand interaction with a metal ion component of a membrane system critical to transport processes, neurotransmitter, and adenylcyclase action. Drug interaction thus initiates chemical transduction leading to adaptive alterations in biochemical processes coupled to the receptors, and these alterations are time dependent. It is concluded that applicability of this concept relates to neuropsychiatric agents with structural differences and diverse effects. 13 references. (Author abstract modified)

001272 Hata, Fumiaki; Uchida, Shuji; Takeyasu, Kunio; Ishida, Hajime; Yoshida, Hiroshi. Dept. of Pharmacology, Tokushima University School of Dentistry, Kuramoto-cho, Tokushima 770, Japan **Changes in alpha-adrenergic receptors in rat brain in vitro by preincubation with alpha-adrenergic ligands.** Japanese Journal of Pharmacology. 30(4):570-574, 1980.

Preincubation of Sprague-Dawley rat brain homogenate with alpha-adrenerigc agonists increased the number of alpha-adrenerigc receptors, measured by 3H-WB4101 binding. Preincubation with antagonists had concentration dependent effects: low concentrations of phentolamine and ergotamine produced a slight increase in 3H-WB4101 binding, but concentrations greater than 100nM for phentolamine and 3nM for ergotamine decreased binding. Results are discussed in terms of a dynamic interaction of active and inactive alpha-receptors. 30 references.

001273 Hayashi, Shigehiro; Miyazaki, Mizuo; Toda, Noboru. Dept. of Pharmacology, Shiga University of Medical Sciences, Seta, Ohtsu 520-21, Japan **Responsiveness to vasoactive agents of cerebral and mesenteric arteries isolated from control and reserpine-treated dogs.** British Journal of Pharmacology. 68(3):473-478, 1980.

Pretreatment of dogs with reserpine did not alter the contractile responses of isolated cerebral and mesenteric arteries to noradrenaline. Tyramine-induced contractions of mesenteric arteries were attenuated by reserpine, but contraction of cerebral arteries was not affected. Reserpine also failed to alter the response of cerebral arteries to 5-hydroxytryptamine or the nicotine-induced relaxation of cerebral arteries contracted with prostaglandin-F2alpha. Reserpine did not alter the relaxant effects of acetylcholine, isoprenaline, and potassium in cerebral and mesenteric arterial strips contracted with prostaglandin. Results indicate that tyramine and nicotine do not release noradrenaline from dog cerebral arteries in amounts sufficient to cause significant contractions. 27 references. (Author abstract modified)

001274 Herink, J.; Fusek, J.; Hrdina, V. Purkyne Medical Research Institute, 502 60 Hradec Kralove, Czechoslovakia **The effect of clonazepam on atropine spikes in the limbic system.** Activitas Nervosa Superior. 22(3):209-210, 1980.

The effect of clonazepam on atropine spikes in the hippocampus and amygdala was investigated in male Wistar rats. In the experimental group, clonazepam was given in a dose of 1.0mg/kg intravenously about 10 minutes after the application of atropine (0.2mg/kg). The effects of both drugs were observed for 4 hours. Clonazepam had a suppressive effect on the frequency of atropine spikes in the hippocampus and amygdala. This suppression reached up to 50% of control values during the 60th

minute after clonazepam, and it was followed by a complete disappearance of spikes. Irrespective of this decrease in frequency, the amplitude of spikes was higher after clonazepam administration, especially in the amygdala. 2 references.

001275 Hernandez, Luis; Gottberg, Estela. Depto. de Fisiologia, Facultad de Medicine, Universidad de Los Andes, Merida, Venezuela. **Systemic insulin decreases lateral hypothalamic unit activity.** Physiology & Behavior. 25(6):981-984, 1980.

The effects of systemic insulin on lateral hypothalamic unit activity were assessed. In succinylcholine immobilized rats, unit activity of lateral hypothalamic neurons decreased after intraperitoneal injections of insulin. Some neurons in a region between lateral and medial hypothalamus and at the ventromedial nucleus increased their activity after insulin injection. Results are interpreted as electrophysiological evidence of an insulin dependent hypothalamic mechanism and its behavioral role is discussed. 13 references. (Author abstract modified)

001276 Hernandez, R. Jorge. Laboratory of Neurontogeny, Dept. of Neurosciences, Centro de Investigacion y Estudios Avanzados, A.P. 14-740, Mexico City 14, DF Mexico **Effects of malnutrition and quipazine on rat cerebral cortex ATPase activity during development.** Developmental Neuroscience. 3(4-6):277-282, 1980.

The effects of malnutrition and quipazine on rat cerebral cortex adenosine triphosphatase (ATPase) were investigated. The developmental response of Na-K-ATPase to early serotonin changes induced by early malnutrition and by the serotonin agonist, quipazine was studied from birth to day 30. Agonist treatment produced a response of the enzyme activity at early stages of development in normal and malnourished brains. It is suggested that the induction of serotonin changes through malnutrition could play an important role in the development and maturation of Na-K-ATPase activity, and that brain serotonin receptors could be involved in such a response. 15 references. (Author abstract modified)

001277 Hill, Harlan F. University of Illinois, Rockford School of Medicine, Urbana, IL **Perinatal neuroleptic actions -- developmental results. (Unpublished paper).** Final Report, NIMH Grant R03-MH-32872, 1980. 7 p.

After oral administration of the drugs haloperidol and pimozide to pregnant rats, the following parameters were measured: the time course and extent of drug transfer into fetal brain; the maternal/fetal brain concentration ratios resulting from oral administrations of various dose levels; and the time course and extent of drug transfer into neonatal brain resulting from daily oral administrations of various dose levels. From this data: 1) drug transfer properties, fetal versus neonatal brain, associated with the oral administration of these neuroleptics to pregnant and maternal rats were compared; and 2) the effect of various dose levels of haloperidol and pimozide on regional concentrations of catecholamines in brains of offspring of drug-treated versus control females at several maturational stages following termination of drug administration was determined. Overall, the data have shown that a meaningful concentration of either haloperidol or pimozide in the brains of developing rats would almost certainly result from continuous, daily administration of dosages within the dose range examined if dosing commenced on the fifteenth gestational day and continued (via the mother) through postnatal day 10 or 12.

001278 Hill, Joanna M. Laboratory of Brain Evolution and Behavior, NIMH, Bethesda, MD 20205 **Sex difference in brain iron. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Rat brains were analyzed for iron content to determine if a sex difference exists in brain iron levels as might be possible since ovarian hormones affect the synthesis of both ceruloplasmin, an iron-mobilizing factor, and ferritin, the iron storage protein. Brain tissue was analyzed histochemically with Perl's method for ferric iron to obtain a qualitative measure of iron as well as to localize high iron areas. A more intense Perl's reaction was obtained with the female brain; however, in both sexes, iron was evident in the globus pallidus and substantia nigra. Quantitative measures of iron levels were made by spectrophotometry. The data demonstrate a sex difference in brain iron which parallels that in the serum and liver. Ovarian hormones, through their effects on ferritin and ceruloplasmin, are implicated in the establishment and maintenance of this sex difference. It is suggested that the availability of iron has important consequences in those aspects of cerebral respiration and neurotransmitter metabolism in which iron plays a role. (Author abstract modified)

001279 Hirata, F.; Strittmatter, W. J.; Axelrod, J.; Mollorga, P.; Tallman, J. F.; Henneberry, R. C.; Torda, T.; Yamaguchi, I.; Kopin, I. J. Section of Pharmacology, Laboratory of Clinical Science, NIMH, Bldg. 10, 2D47, Bethesda, MD 20205 **Phospholipid methylation: a biochemical event of signal transduction. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 6 p.

Data are presented to show that the activation of phospholipid methylation influences the cyclic nucleotide formation. Areas covered include: 1) lipid methylation and translocation; 2) stimulation of phospholipid methylation by beta-adrenergic agonists; 3) masking and unmasking of beta-adrenergic receptors; 4) desensitization of beta-adrenergic receptors and lipid metabolism; and 5) changes of beta-adrenergic receptor number in intact animals. 11 references.

001280 Hitzemann, Robert; Natsuki, Reiko; Ohizumi, Yasushi; Johnson, David; Loh, Horace. Dept. of Pharmacology, University of California, San Francisco, CA 94143 **Influence of morphine on membrane turnover and function.** Advances in Biochemical Psychopharmacology. 20:495-520, 1979.

The effects of morphine on brain protein synthesis, GABA transport and receptor binding, and phospholipids are reviewed. Data indicate that morphine inhibits or has no effect on overall protein synthesis in chronically morphinized animals. However, chronic morphinization increases the synthesis of some high molecular weight proteins in synaptic plasma membranes isolated from a GABA enriched population of nerve ending particles. Chronic morphinization does not affect high affinity GABA transport or receptor binding. Many of the effects of morphine and beta-endorphin on phosphoinositide synthesis and metabolism are both mimicked and blocked by naloxone. Chronic morphinization specifically increases the rate of calcium stimulated serine phospholipid base exchange. 73 references.

001281 Ho, Chiu-Chung. Wayne State University **Interaction studies of ethanol and psychotropic drugs in rodents: possible involvement of adenosine triphosphatases.** Dissertation Abstracts International. 41(4):1333-B, 1980. Ann Arbor, Univ. Microfilms No. 8022762, 241p., 1980.

Interaction effects between ethanol (E) and psychotropic drugs (methaqualone, M; phenobarbital, PH; and lithium carbonate, Li) on E preference, narcosis, toxicity, blood and tissue drug levels, and subcellular adenosine triphosphatases (ATPases) activities were investigated in rats and mice during acute, chronic, and withdrawal states. A single dose of M produced a transient dose-dependent suppression of voluntary E consumption; no significant change in E intake was observed during chronic and withdrawal states with M. Chronic forced drinking

of PH increased E intake. A single dose of M delayed disappearance of E from blood and brain; no significant change in blood and brain E levels was found after acute or chronic Li, although acute and chronic E reduced Li clearance from brain and kidneys. Potentiation in narcosis and toxicity between E and M, PH, and Li was found; naloxone antagonized this drug-induced narcosis and toxicity. Acute treatment with E and PH alone increased liver, but not brain, ATPase activity; combined E and PH treatment produced an increased liver ATPase and a small increase in brain Na-K-ATPase activity. Neither M alone or with E nor Li alone or with E produced changes in brain ATPase activity; Li plus chronic E increased ATPase activity in rat brain. Both acute and chronic Li alone or with E produced increased kidney ATPase activity. In vitro, PH, E, and M inhibited brain Na-K-ATPase activity competitively with potassium chloride and noncompetitively with ATP. (Journal abstract modified)

001282 Hoffman, A. R.; Poth, M. A.; Axelrod, J. Endocrine Unit, Massachusetts General Hospital, Boston, MA 02114 **Developmental aspects of catecholestrogen synthesis. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 9 p.

The developmental history and the regulation of catecholestrogen synthesis in the rat is discussed in detail, and the physiology of these important neurohormones is briefly considered. Catecholestrogens are synthesized in brain, liver, and other tissues by estrogen-2-hydroxylase, a cytochrome-P450 dependent mono-oxygenase. Estrogen-2-hydroxylase activity can be detected in both liver and brain in the fetal rat. By 8 weeks of age, sexual dimorphism is apparent: male rats have higher specific enzyme activities in both liver and brain than female rats. Androgenic hormones play a crucial role in the expression of enzyme activity in the adult animal. In utero exposure to phenobarbital results in substantial changes in brain and liver estrogen-2-hydroxylase activities during the first 3 weeks of life. 27 references. (Author abstract modified)

001283 Hollt, V.; Haarmann, I.; Seizinger, B.; Herz, A. Dept. of Neuropharmacology, Max-Planck-Institut fur Psychiatrie, Kraepelinstrasse 2, D-8000 Munich 40, West Germany **Sodium chloride inhibition decreases levels of immunoreactive dynorphin in the neurointermediate pituitary of rats.** European Journal of Pharmacology. 68(2):239-240, 1980.

Immunoreactive dynorphin (DYN) was measured in the neurointermediate lobe of the pituitary of dehydrated male Sprague-Dawley rats and of Brattleboro rats homozygous for diabetes insipidus. Dehydration by forced drinking of sodium chloride for 5 days significantly decreased levels of DYN (71%) as well as vasopressin (VP, 95%). The pituitary concentration of DYN in homozygous Brattleboro rats did not differ from that of heterozygous rats, even though no VP could be detected in the intermediate lobe of the homozygous animals. Results suggest that DYN may act as an endogenous modulator of VP neurosecretion in the posterior lobe of the pituitary. 5 references.

001284 Hong, J. S.; Yang, H. -Y. T.; Gillin, J. C.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Effects of long-term administration of antipsychotic drugs on enkephalinergic neurons.** Advances in Biochemical Psychopharmacology. 24:223-232, 1980.

The effects of long-term administration of antipsychotic drugs on enkephalinergic neurons are described, and implications for development of a new class of antipsychotic compounds are discussed. Data are presented which demonstrate that striatal met-enkephalinergic (ME) neurons are regulated by dopaminergic and cholinergic neurons, and that chronic administration of antipsychotic drugs such as haloperidol causes a selective elevation of ME content in striatum and nucleus accumbens. Results suggest that one of the actions that results from blockade of dopaminergic transmission by haloperidol is an increase in the synthesis and utilization of striatal Leu-enkephalin (LE) and ME. Development of a new class of antipsychotic agents which would cause an increase in ME availability, either by reducing ME metabolism or by stimulating the transsynaptic induction of the rate limiting enzyme for ME biosynthesis, is recommended. 19 references.

001285 Hosein, E. A.; Lapalme, Marc; Lau, Allan; Wan, Ophelia; Stefanysyn, Henry; Zucker, Joyce. Dept. of Biochemistry, McGill University, McIntyre Medical Building, Montreal, Quebec, Canada H3G 1Y6 **Biphasic activity of membrane-bound enzymes in brain mitochondria and synaptosomes during the development of tolerance to and physical dependence on chronic morphine administration to rats.** Canadian Journal of Physiology and Pharmacology. 58(5):484-492, 1980.

The biphasic activity of membrane-bound enzymes in brain mitochondria and synaptosomes during the development of tolerance to and physical dependence on chronic morphine administration was studied in rats. Assay of the membrane-bound NaF-stimulated adenylate cyclase from synaptosomes and Mg2-stimulated adenosine triphosphatase (ATPase) from mitochondria at 0.5h following drug administration during the development of tolerance showed that the immediate and significant inhibitory effect of the drug on the enzymes diminished to zero as the daily dosage was increased. The discontinuity temperature of Mg2-stimulated ATPase decreased from 16.9 to 13.3 degree C, an effect which was obtained even on day 7 of drug treatment when enzyme activity had returned to normal. Assay of these enzymes 48 hr following chronic drug treatment during the development of a withdrawal reaction showed an increase in activities. Results show that during the development of tolerance to, and physical dependence on morphine, there were non-specific biphasic alterations in membrane-bound enzyme activity and the fluorescence produced on interaction with 1-anilino-8-naphthalene sulfonate. It is suggested that these effects were brought about by adaptive changes taking place simultaneously in the membrane lipid components of the brain subcellular particles studied. 37 references. (Author abstract modified)

001286 Houslay, Miles D.; Marchmont, Robert J. Dept. of Biochemistry, University of Manchester Institute of Science and Technology, Sackville St., Manchester M60 1QD, England **Exposure of mitochondrial outer membranes to neuraminidase selectively destroys monoamine oxidase A activity.** Journal of Pharmacy and Pharmacology. 32(1):65-66, 1980.

Incubation of mitochondrial outer membranes from male Sprague-Dawley rats with neuraminidase led to the abolition of 77% of the monoamine oxidase (MAO) type-A activity. Less that 14% of MAO type-B activity was lost. Since neuraminidase removes sialic acid residues from cell membranes, this finding suggests that sialic acid residues are involved in the functioning of MAO type-A. 18 references.

001287 Howells, Richard D.; Simon, Eric J. Dept. of Psychiatry, New York University Medical Center, New York, NY 10016 **Benzodiazepine binding in chicken retina and its interaction with gamma-aminobutyric acid.** European Journal of Pharmacology. 67(1):133-137, 1980.

Saturable, stereoselective high affinity binding sites for benzodiazepines were identified in chicken retina in greater density than reported for rat or cow retina. GABA and muscimol increased specific 3H-flunitrazepam binding in chicken retina in a dose-dependent manner, and this effect was reversed by bicucul-

line methiodide. The enhanced binding induced by GABA reflected an increase in the affinity of flunitrazepam with no change in the number of binding sites. 11 references. (Author abstract modified)

001288 Hruska, Robert E.; Silbergeld, Ellen K. Section on Neurotoxicology, Bldg. 36, Room 4A22, NINCDS, NIH, Bethesda, MD 20205 **Effect of ergot derivatives on post-decapitation convulsions.** Communications in Psychopharmacology. 4(1):57-62, 1980.

The effect of ergot derivatives on postdecapitation convulsions (PDC) in rats was investigated. Lergotrile, Sandoz compound 29-712, and metergoline prolonged the latency and shortened the duration of PDC while bromocriptine and lisuride were ineffective. The decrease in the duration of the PDC was related to the ratio of the in vitro inhibition of norepinephrine (NE) and dopamine (DA) receptor binding. The use of the PDC to analyze relative NE blocking and DA stimulating properties may be useful to define both the PDC and the drug under study. 10 references. (Author abstract modified)

001289 Huang, Yung H.; Maas, James W.; Hu, Grace H. Dept. of Psychiatry, Yale University School of Medicine, 333 Cedar St., New Haven, CT 06510 **The time course of noradrenergic pre- and postsynaptic activity during chronic desipramine treatment.** European Journal of Pharmacology. 68(1):41-47, 1980.

The firing of noradrenergic postsynaptic cells in the hippocampus of male Sprague-Dawley rats treated with desipramine (10mg/kg/day) was examined. A single i.p. injection of desipramine had no effect, but treatment for 7, 14, and 21 days produced firing increases of 20, 38, and 89%, respectively. The firing of noradrenergic cells in the locus coeruleus was decreased by 12, 29, and 34% after treatment with desipramine for 7, 14, and 21 days, respectively. The time course of these changes is similar to that reported for therapeutic action of tricyclic antidepressants in depressed patients. 18 references. (Author abstract modified)

001290 Huidobro, F.; Huidobro-Toro, J. Pablo; Miranda, H. Laboratory of Pharmacology, Institute of Biological Sciences, Catholic University of Chile, Casilla 114-D, Santiago, Chile **Interactions between morphine and the opioid-like peptides in the rat vas deferens.** British Journal of Pharmacology. 70(4):519-525, 1980.

Morphine, methadone, levorphanol, pethidine, etonitazene, and related alkaloids enhanced the electrically-evoked muscular contraction of the Sprague-Dawley rat vas deferens, but enkephalins and beta-endorphin inhibited the twitching. Beta-endorphin was about 100 times more potent than enkephalins. Pretreatment of the vasa with beta-endorphin sensitized the tissue to the effect of morphine, and morphine treatment antagonized the response to beta-endorphin or enkephalin. Morphine did not alter the sensitivity to exogenously-administered noradrenaline, dopamine, or potassium. Results suggest there are multiple opiate receptors in the rat vas deferens. 22 references. (Author abstract modified)

001291 Hutchison, J. B.; Dockray, G. J. Dockray: Physiological Laboratory, University of Liverpool, Liverpool, England **Inhibition of the action of cholecystokinin octapeptide on the guinea pig ileum myenteric plexus by dibutyryl cyclic guanosine monophosphate.** Brain Research. 202(2):501-505, 1980.

Inhibition of the action of cholecystokinin octapeptide (CCK8) on the guinea-pig ileum myenteric plexus by dibutyryl cyclic guanosine monophosphate (Bt2cGMP) is described. As in the pancreas, Bt2cGMP acts as a reversible competitive antagonist of the action of CCK8 on strips of longitudinal muscle from guinea-pig ileum. The effects of Bt2cGMP on both tissues are specific to CCK8 with the exception of a weak inhibitory action against substance-P on the ileum. The mode of action of Bt2cGMP remains to be established, but since other guanosine nucleotides show little or no specific anti-CCK8 actions on the ileum, this effect is best considered independently of the possible second messenger functions of cGMP. 22 references.

001292 Hyttel, John. Dept. of Pharmacology and Toxicology, H. Lundbeck & Co., DK-2500 Copenhagen-Valby, Denmark **No evidence for increased dopamine receptor binding in superresponsive mice after a single dose of neuroleptics.** Advances in Biochemical Psychopharmacology. 24:167-173, 1980.

Biochemical correlates for behavioral supersensitivity following neuroleptic administration were investigated. The initial increase in dopamine (DA) synthesis and release rate, expressed in 14C-DA accumulation and levels of homovanillic acid, respectively, after teflutixol is followed not by a return to normal, but by a decrease lasting 3 to 4 days, after which synthesis and release rates return to normal. The pharmacological superresponsiveness and the decrease in DA synthesis and release seen after the initial receptor blockade after a single dose of neuroleptic drugs in mice are not accompanied by changes in DA receptor characteristics in corpus striatum, as are seen after prolonged neuroleptic treatment. However, it is emphasized that only part of the receptors labeled by the different ligands are functionally active. 17 references.

001293 Inoki, R.; Hayashi, T.; Matsumoto, K.; Kotani, Y.; Oka, M. Dept. of Pharmacology, Osaka University Dental School, Osaka 530, Japan **Inhibitory action of morphine on the release of a bradykinin-like substance after sciatic nerve stimulation.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):283-293, 1980.

Intramuscular injection of morphine (5mg/kg) inhibited the release of a bradykinin-like substance in the subcutaneous perfusate of the male Wistar rat paw after electrical stimulation of the sciatic nerve. The release induced by sciatic nerve stimulation was also significantly inhibited by physostigmine, but not by gallamine. Adrenergic agents also induced release, and alpha-adrenergic blocking agents inhibited release. No stimulation-induced release of the bradykinin-like substance was observed in rats treated with 6-hydroxydopamine or reserpine; DOPA restored stimulation-induced release only in the reserpinized rats. Results suggest that the inhibitory action of morphine is due to inhibition of the release of noradrenaline. 11 references. (Author abstract modified)

001294 Iriki, Atsushi; Toda, Kazuo. Dept. of Physiology, Tokyo Medical and Dental University, Bunkyo-ku, Tokyo, 113, Japan **Morphine and electroacupuncture: comparison of the effects on the cortical evoked responses after tooth pulp stimulation in rats.** European Journal of Pharmacology. 68(1):83-87, 1980.

The effects of morphine and electroacupuncture on cortical evoked responses (CERs) after tooth pulp stimulation were studied in female Wistar rats. Morphine suppressed CERs in secondary somatosensory areas more strongly than CERs in primary somatosensory areas, but electroacupuncture suppressed CERs to the same degree in both areas. Results suggest that endogenous opiates released by electroacupuncture may have more complex actions than morphine on central pain pathways. 10 references. (Author abstract modified)

001295 Iudice, A.; Virgili, P.; Muratorio, A. 2 Clinica Neurologica, University of Pisa, Pisa, Italy **The electroretinogram in Parkinson's disease.** Research Communications in Psychology, Psychiatry and Behavior. 5(3):283-289, 1980.

Electroretinographic recordings (ERGs) were obtained for 27 Parkinsonian patients before and following short-term and long-term treatment with L-DOPA plus decarboxylase inhibitors (DCIs). The data were compared with those obtained for six volunteers matched for age. The baseline ERG (measurement of the b-wave) was within normal limits in all patients even after short-term therapy. Following long-term treatment, five of the patients displayed a significant decrease in b-wave amplitude. This appeared to be related to the presence of neurological and/or psychiatric symptomatology. (Author abstract)

001296 Iversen, L. L.; Quik, M.; Emson, P. C.; Dowling, J. E.; Watling, K. J. MRC Neurochemical Pharmacology Unit, Dept. of Pharmacology, University of Cambridge, Cambridge, England **Further evidence for the existence of multiple receptors for dopamine in the central nervous system.** Advances in Biochemical Psychopharmacology. 21:193-202, 1980.

Experimental evidence supporting the existence of multiple receptors for dopamine in the CNS is reviewed. It is noted that the physiological and functional importance of the D1 and D2 dopamine receptors remains largely unknown. A useful model, which appears to reflect only the D2 receptors, is the inhibitory effect of dopamine on prolactin secretion from anterior pituitary cells. The actions of dopamine in the vertebrate retina may represent a model for D1 receptors. The urgent need for the development of more selective agonists and antagonists of the propsed D1 and D2 receptor types, to define their respective roles is noted. It appears that most neuroleptic drugs are capable of antagonizing the actions of dopamine at both D1 and D2 receptors, although there are differences in their relative potencies at these sites. 35 references.

001297 Iwata, N.; Mikuni, N. Central Research Laboratories, Sankyo Co., Shinagawa-Ku, Tokyo 140, Japan **EEG change in the conscious rat during immobility induced by psychological stress.** Psychopharmacology. 71(2):117-122, 1980.

Stress-induced catatonic immobility was accompanied by EEG changes in male Wistar-Imamichi rats. Animals conditioned to expect electroshock when placed in a test box exhibited catatonic immobility even when the shock was not applied. During this state, relative brain wave activity over the range of 7.5 to 13.0Hz significantly increased in the cortex and hippocampus but not in the amygdaloid and caudate nuclei. The augmented brain wave (potentiated alpha) activity was suppressed by systemic administration of diazepam (10mg/kg), nicotinamide (1mg/kg), chlorpromazine (10mg/kg), or CS-386 (5mg/kg), a new anxiolytic agent. Concurrently, all the anxiolytic agents increased the relative activities of waves above 13.0Hz. 18 references. (Author abstract modified)

001298 Jackisch, Rolf; Zumstein, Anton; Hertting, Georg; Starke, Klaus. Pharmakologisches Institut, Universitat Freiburg, Hermann-Herder-Strasse 5, D-7800 Freiburg i. Br., West Germany **Interneurones are probably not involved in the presynaptic dopaminergic control of dopamine release in rabbit caudate nucleus.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(2):129-133, 1980.

The potassium evoked overflow of tritium from slices of rabbit caudate nucleus preincubated with 3H-dopamine was reduced by apomorphine and enhanced by haloperidol. The effects of haloperidol and apomorphine were as pronounced in the presence of tetrodotoxin as in its absence. It is concluded that the presynaptic dopaminergic modulation of dopamine release is not mediated by a tetrodotoxin sensitive interneuronal pathway. 30 references. (Author abstract modified)

001299 Jackson, D. M.; Dunstan, R.; Perrington, A. Dept. of Pharmacology, University of Sydney, Sydney, Australia **The hyperkinetic syndrome following long-term haloperidol treatment: involvement of dopamine and noradrenaline.** Journal of Neural Transmission. 44:175-186, 1979.

Spontaneous locomotor activity (hyperkinesia) following withdrawal from long-term haloperidol treatment was investigated in mice. The hyperkinesia was antagonized by an alpha-adrenergic receptor antagonist and by a dopamine-beta-hydroxylase inhibitor but not by haloperidol (a dopamine receptor antagonist). A tyrosine hydroxylase inhibitor was effective in antagonizing the hyperkinesia and this blockage could be completely reversed by the administration of a low dose of a catecholamine precursor. The data suggest that noradrenergic systems are of importance for the manifestation of the hyperkinetic syndrome seen in mice withdrawn from long-term haloperidol treatment. (Author abstract modified)

001300 Janka, Z.; Szentistvanyi, I.; Rimanoczy, A.; Juhasz, A. Dept. of Neurology and Psychiatry, University Medical School, P.O. Box 397, H-6701 Szeged, Hungary **The influence of external sodium and potassium on lithium uptake by primary brain cell cultures at lithium concentration.** Psychopharmacology. 71(2):159-163, 1980.

Sodium and potassium ions significantly influenced the uptake of lithium by primary cultures from embryonic chick brain at a therapeutic lithium concentration (1.5mM). Lithium influx and the level of steady-state intracellular lithium were significantly reduced when the external sodium concentration was increased. At physiological extracellular sodium level, the steady-state content of lithium in brain cells was about half that observed in the presence of 10mM sodium, and the value of the intracellular/extracellular lithium distribution ratio was less than one. External potassium (0.5 to 3mM) strongly inhibited lithium uptake, and ouabain had no effect on potassium-sensitive lithium uptake. Sodium influx was higher in cultures preloaded with lithium than in untreated cultures. 30 references. (Author abstract modified)

001301 Jenner, P.; Clow, A.; Reavill, C.; Theodorou, A.; Marsden, C. D. Marsden: University Dept. of Neurology, Inst. of Psychiatry & King's College Hospital Medical School, Denmark Hill, London, SE5, England **Stereoselective actions of substituted benzamide drugs on cerebral dopamine mechanisms.** Journal of Pharmacy and Pharmacology. 32(1):39-44, 1980.

Apomorphine-induced locomotor activity in reserpinized male Swiss mice was antagonized by pretreatment with (-)-sulpiride and (-)-sultopride, but not by the ()-enantiomers of these drugs. Stereotyped behavior induced in male Wistar rats by apomorphine or amphetamine was antagonized by (-)-sultopride, but not by ()-sultopride or by either enantiomer of sulpiride. Striatal and mesolimbic concentrations of dopamine metabolites were increased by (-)-sultopride and (-)-sulpiride; ()-sultopiride increased 3,4,-dihydroxyphenylacetic acid but not homovanillic acid, and ()-sulpiride had no effect. Dopamine concentrations were reduced by sultopride but not by sulpiride. Low concentrations of the (-)-enantiomers of both drugs displaced 3H-spiperone from its specific binding site in rat striatal preparations, but the ()-enantiomers were 40 to 100 times less active. Neither enantiomer of either drug antagonized dopamine stimulation of adenylate cyclase in rat striatal preparations. 25 references. (Author abstract modified)

001302 Jhamandas, K.; Elliott, J. Dept. of Pharmacology, Queen's University, Kingston, Ontario, Canada K7L 3N6 **Comparative effects of somatostatin and enkephalins on the guinea pig ileum and the rat vas deferens.** Canadian Journal of Physiology and Pharmacology. 58(11):1389-1392, 1980.

The action of somatostatin, or somatotrophin release inhibiting factor (SRIF), was compared with that of Met-enkephalin (Tyr-Gly-Gly-Phe-Met) in the electrically-stimulated guinea-pig ileum myenteric plexus longitudinal muscle and with that of an enkephalin analogue (FK 33-824(Tyr-D-Ala-Gly-MePhe-Met-(0)-ol)) in the rat vas deferens. In both tissues SRIF produced a twitch inhibition which was not antagonized by naloxone and which showed a long-lasting tachyphylaxis. The enkephalins tested produced a naloxone antagonizable inhibition of twitch in both tissues but no tachyphylaxis. Therefore, it is concluded that SRIF is not acting at opiate receptors in these tissues. 20 references. (Author abstract modified)

001303 Jhamandas, Khem; Dumbrille, Anne. Dept. of Pharmacology, Queen's University, Kingston, Ontario, Canada K7L 3N6 **Regional release of (3H)adenosine derivatives from rat brain in vivo: effect of excitatory amino acids, opiate agonists, and benzodiazepines.** Canadian Journal of Physiology and Pharmacology. 58(11):1262-1278, 1980.

The effects of three classes of theophylline sensitive agents (glutamic acid and related excitatory amino acids, opiate agonists, and benzodiazepines) on the in vivo release of labelled adenosine (AD) from rat cerebral cortex and cerebellum were examined. Application of L-glutamate, L-aspartate, kainate, veratridine, and potassium to the cortex or cerebellum preloaded with (3H)adenosine or (3H)adenine, markedly stimulated the release of labelled adenosine derivatives from these regions. The opiate agonists morphine and D-Met2-Pro5-enkephalinamide by themselves did not influence the spontaneous release of (3H)AD from the cortex but both agents very effectively inhibited the release evoked by L-glutamate. Topical application or systemic administration of two benzodiazepines, flurazepam or diazepam, stimulated the release of (3H)AD from the cerebral cortex but in the cerebellum only flurazepam produced this effect. 40 references. (Author abstract modified)

001304 Johnson, Kenneth M.; Vickroy, Thomas W. Dept. of Pharmacology and Toxicology, University of Texas Medical Branch, Galveston, TX 77550 **Phencyclidine-induced stimulation of synaptosomal tyrosine hydroxylase activity.** Psychopharmacology Bulletin. 16(4):73-76, 1980.

The effects of phencyclidine (PCP) on tyrosine hydroxylase activity in rat brain synaptosomes were studied since tyrosine hydroxylase is involved in the regulation of dopaminergic functions in the rat. It was observed that PCP stimulated synaptosomal tyrosine hydroxylase in a concentration dependent manner similar to that previously reported for amphetamine. The results suggest that PCP stimulates the activity of tyrosine hydroxylase by releasing DA from a reserpine sensitive site, and under the described conditions this pool (probably vesicular) normally contributes to the tonic inhibition of this enzyme. 8 references.

001305 Johnson, Richard William; Reisine, Terry; Spotnitz, Seth; Wiech, Norbert; Ursillo, Richard; Yamamura, Henry I. Yamamura: Dept. of Pharmacology, University of Arizona Health Sciences Center, Tucson, AZ 85724 **Effects of desipramine and yohimbine on alpha2- and beta-adrenoceptor sensitivity.** European Journal of Pharmacology. 67(1):123-127, 1980.

The effects of yohimbine on desipramine-induced changes in adrenoreceptors in the male Sprague-Dawley rat limbic forebrain were studied. Treatment with both drugs caused a significant decrease in (3H)dihydroalprenolol binding, which was not apparent after treatment with either drug alone. Yohimbine also accelerated and enhanced the desipramine-induced increase in (3H)clonidine binding. 9 references. (Author abstract modified)

001306 Jones, Roland S. G. Psychiatric Research Division, University Hospital, Saskatoon, Saskatchewan, Canada S7N OXO **Long-term administration of atropine, imipramine, and viloxazine alters responsiveness of rat cortical neurones to acetylcholine.** Canadian Journal of Physiology and Pharmacology. 58(5):531-535, 1980.

The effects of long-term administration of atropine, imipramine, and viloxazepine on responsiveness of rat cortical neurons to acetylcholine were investigated. Rats were treated daily with atropine, imipramine, viloxazine or saline for 14 days. Thirty-six hours following the final injection, the rats were anesthetized with urethane and the sensitivity of neurons in the somatosensory cortex to iontophoretically applied ACh was determined. In saline-treated animals, the large majority of neurons was excited by ACh, with depression being observed infrequently. This was reversed in drug-treated animals, the predominant response to iontophoretic ACh becoming one of depression. The results indicate that long-term administration of antidepressant drugs may induce qualitative changes in the sensitivity of central cholinergic systems. 20 references. (Author abstract modified)

001307 Kalix, Peter. Dept. of Pharmacology, University of Geneva, 20 Rue de l'Ecole de Medicine, CH-1211 Geneva 4, Switzerland **A constituent of khat leaves with amphetamine-like releasing properties.** European Journal of Pharmacology. 68(2):213-215, 1980.

The effects of (-)-cathinone, an alkaloid found in khat leaves, were studied in rabbit striatal tissue prelabeled with (3H)dopamine. The alkaloid enhanced release of the label, with a potency similar to that of ()-amphetamine. Results indicate that (-)-cathinone has amphetamine-like effects at the cellular level. 10 references. (Author abstract modified)

001308 Karobath, M.; Sperk, G.; Schonbeck, G. Abteilung fur Biochemische Psychiatrie, Psychiatrische Universitatsklinik, Universitat Wien, Vienna, Austria **Evidence for an endogenous compound interfering with 3H-diazepam binding to rat brain membranes.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 114-118).

Evidence is presented for the existence of endogenous compounds which interfere with benzodiazepine receptor binding in vitro. Using an in vitro receptor binding assay, an inhibitory endogenous 3H-diazepam binding inhibitory factor (DIF) was found, the regional distribution of which resembles the distribution of high affinity binding sites of 3H-flunitrazepam in vitro or in vivo. It was also shown that GABA or GABA agonists are capable of stimulating 3H-benzodiazepine binding. The observed stimulation of benzodiazepine high affinity binding appears to be mediated by a GABA receptor site which has been found in all examined brain regions and which does not resemble postsynaptic GABA receptors characterized by agonist bonding studies. 11 references. (Author abstract modified)

001309 Karobath, Manfred; Placheta, Peter; Lippitsch, Margit; Krogsgaard-Larsen, Povl. Dept. of Biochemical Psychiatry, Psychiatrische Universitats klinik, University of Vienna, Vienna, Austria **Characterization of GABA-stimulated benzodiazepine receptor binding.** Advances in Biochemical Psychopharmacology. 21:313-320, 1980.

The characterization of the GABA-stimulated benzodiazepine receptor binding is described. Data are presented which support the notion of a heterogeneity of GABA recognition sites in the rat CNS. The pharmacological properties of the GABA recognition site which mediates the stimulation of benzodiazepine binding appear to be different from those of the Na independent GABA binding site. With the exception of the cerebellum, the relative density of benzodiazepine receptors and Na independent GABA binding sites in the examined brain regions is rather con-

stant. However, in the cerebellum, the number of Na independent GABA binding sites is comparatively much higher. Therefore, at least in cerebellum, Na independent GABA binding sites may occur independently of benzodiazepine receptors. 16 references.

001310 Karoum, Farouk; Speciale, Samuel G., Jr.; Wyatt, Richard Jed. Laboratory of Clinical Psychopharmacology, Div. of Special Mental Health Research, NIMH, St. Elizabeths Hospital, Washington, DC 20032 **Differential sensitivity of hypothalamic dopaminergic and noradrenergic neurones to pharmacological manipulation.** British Journal of Pharmacology. 69(3):351-354, 1980.

The effects of systemic administration of apomorphine, haloperiodol, reserpine, phenoxybenzamine, oxotremorine, and scopolamine on hypothalamic catecholamines and metabolites were studied in male Sprague-Dawley rats. Haloperidol increased the concentration of 3-methoxy-4-hydroxyphenylglycol (MHPG), and this effect was blocked by apomorphine pretreatment. MHPG was increased by oxotremorine and decreased by scopolamine. Reserpine decreased noradrenaline (NA) and increased MHPG. Phenoxybenzamine increased MHPG without altering NA. Dopamine, 3,4-dihydroxyphenylacetic acid, and homovanillic acid were not changed by apomorphine and haloperidol, but were influenced by other drugs. 14 references. (Author abstract modified)

001311 Kastin, Abba J.; Nissen, Cheryl; Zadina, James E.; Schally, Andrew V.; Ehrensing, Rudolph H. Endocrinology, Section of the Medical Service, V.A. Medical Center, 1601 Perdido St., New Orleans, LA 70146 **Naloxone-like actions of MIF-1 do not require the presence of the pituitary.** Pharmacology Biochemistry and Behavior. 13(6):907-912, 1980.

The actions of peripherally administered Pro-Leu-Gly-NH2(MIF-1) and naloxone in blocking the effects of morphine in the tail flick test were measured across a wide range of five doses in hypophysectomized and intact mice. The presence of the pituitary gland failed to influence the response to MIF-1 or naloxone. Both hypophysectomized and intact mice were significantly affected by these two compounds at doses of 0.01, 0.1, 1.0, and 10.0mg/kg IP. Preliminary experiments with other tests show that at 10.0mg/kg, naloxone, but not MIF-1, was effective in preventing the Staub tail reflex and in precipitating withdrawal jumping in mice implanted with morphine pellets. Results emphasize the differential actions of MIF-1 as an opiate antagonist and demonstrate that the pituitary is not required for their mediation. 13 references. (Author abstract modified)

001312 Kaur, Charanjit; Mangat, H. K. Dept. of Biology, Guru Nanak Dev University, Amritsar-143005, India **Synchronization of EEG activity of male rhesus monkeys Macaca mulatta treated with ovocyclin.** Acta Neurobiologiae Experimentalis. 39(5):361-367, 1979.

The effects of intramuscular injection of estradiol dipropionate (ovocyclin) in a dose of 10mg/d on EEG activity were investigated in six male rhesus monkeys. Bipolar stainless steel electrodes were stereotaxically implanted in hypothalamus and cortex of six male monkeys. On the first of three injection days, slow-waves appeared only in preoptic hypothalamus. On the second day, slow-waves also appeared in posterior hypothalamus. Generalized slowing with an increase in amplitude appeared in all the hypothalamic areas and cortex on the third day. This suggests that estrogen possesses a cumulative inhibitory action in the form of synchronization of EEG activity. 17 references. (Author abstract modified)

001313 Kebabian, John W.; Chen, T. C.; Cote, T. E. Experimental Therapeutics Branch, NINCDS, Bldg. 10, Rm.6D-16, NIH, Bethesda, MD 20205 **Endogenous guanyl nucleotides: components of the striatum which confer dopamine-sensitivity to adenylate cyclase.** Communications in Psychopharmacology. 3(6):421-428, 1979.

The possibility that endogenous guanyl nucleotides, guanosine 5'-triphosphate (GTP) and guanosine 5'-diphosphate (GDP), regulate the coupling of the dopaminergic D-1 receptor to adenylate cyclase is discussed. The stimulatory effect of dopamine on adenylate cyclase activity in rat striatal homogenates is lost when the particulate striatal material is washed, suggesting the presence of an endogenous soluble coupling factor. Exogenous GTP or GDP can restore coupling of the dopamine receptor to adenylate cyclase. Fractions containing relatively high levels of endogenous GTP and GDP can also increase dopamine stimulated adenylate cyclase activity. 9 references.

001314 Keller, H. H.; Burkard, W. P.; Da Prada, M. Pharmaceutical Research Dept., F. Hoffman-La Roche & Co. Ltd., Basel, Switzerland **Dopamine receptor blockade in rat brain after acute and subchronic treatment with tricyclic antidepressants.** Advances in Biochemical Psychopharmacology. 24:175-179, 1980.

Dopamine (DA) receptor blockade in rat brain acute and subchronic treatment with tricyclic antidepressants was investigated. Ro 11-2465, as well as Cl-imipramine and amitriptyline, were found to increase DA turnover in rat brain, probably as a consequence of DA receptor blockade. Results indicate that the increase of cerebral homovanillic acid observed with relatively low doses of Ro 11-2465 and Cl-imipramine is not an effect secondary to the strong serotonin uptake inhibition, but rather a direct effect on central DA neurons. It is suggested that this effect, which is not subject to tolerance and which does not seem to be the consequence of the strong serotonin uptake inhibition, may have some implication for the antidepressant effect of these drugs. 8 references.

001315 Kemali, Milena; Kemali, Dargut. Laboratorio di Cibernetica del CNR, I-80072 Arco Felice, Naples, Italy **Lysergic acid diethylamide: morphological study of its effect on synapses.** Psychopharmacology. 69(3):315-317, 1980.

A morphometric analysis of the effect of lysergic acid diethylamide (LSD) on synapses in the habenulae and the interpeduncular nucleus of the frog is described. The Os04 fixed nervous tissue was treated with ethanol phosphotungstic acid (EPTA). Intersection of lattice lines with synapses were counted as a porportion of the total length of lines. LSD-treated frogs had a higher total area of synaptic contact than control frogs. Exocytosis profiles were observed only in LSD-treated frogs. Other qualitative changes in the ultrastructural characteristic of synapses were appreciable after LSD administration. 11 references. (Author abstract)

001316 Kim, Y. I.; Kim, Y. J.; Lee, J. H.; Woo, J. H. Dept. of Pharmacology, Chonnam University Medical School, Kwangju, Korea **Clonidine on the pressor response to raised intracranial pressure.** Archives Internationales de Pharmacodynamie et de Therapie. 245(1):129-138, 1980.

The mechanism of the pressor response to raised intracranial pressure (ICP) in urethane anesthetized rabbits was investigated. Intraventricular clonidine inhibited the pressor response to raised ICP, and intraventricular phenotolamine antagonized the inhibitory effect of clonidine on the pressor response. In reserpine-treated rabbits, the pressor response to raised ICP was not observed. Following intraventricular norepinephrine, however, the pressor response was observed. Intraventricular clonidine inhibited the pressor response that could be observed in the reserpine-treated rabbits following the intraventricular norepinephrine. These results suggest that the central sympathetic neurons

play an important role in producing the pressor response to raised ICP. 27 references. (Author abstract modified)

001317 Kinnier, William J.; Chuang, De-Maw; Costa, Erminio. Costa: Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Down regulation of dihydroalprenolol and imipramine binding sites in brain of rats repeatedly treated with imipramine.** European Journal of Pharmacology. 67(2/3):289-294, 1980.

In Sprague-Dawley rats given repeated injections of imipramine, the number of high affinity binding sites for 3H-imipramine and 3H-dihydroalprenolol (3H-DHA) was reduced in crude synaptic membrane preparations from various brain structures. Binding sites to 3H-imipramine became subsensitive in the hippocampus but not in cortex or cerebellum, whereas binding sites to 3H-DHA became subsensitive in cortex and cerebellum but not hippocampus. Results suggest that the down regulation of beta-adrenergic receptors may not coincide with the down regulation of high affinity sites for imipramine in rats treated repeatedly with imipramine. 24 references. (Author abstract modified)

001318 Kloog, Yoel; Flynn, Donna; Hoffman, Andrew R.; Axelrod, Julius. Section on Pharmacology, Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Enzymatic carboxymethylation of the nicotinic acetylcholine receptor. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 10 p.

The enzymatic carboxymethylation of the acetylcholine receptors isolated from Torpedo california is described. The acetylcholine receptor was found to be one of the most active substrates for protein carboxymethylase. The receptor methylation is not affected by the binding of cholinergic ligand. Purificaton of protein methyl acceptor activity from membranes of electric organ paralleled that of enrichment of the acetylcholine receptor. The enzyme which catalyzes the reaction, protein carboxymethylase, was found in the Torpedo electric organ. The enzyme from the Torpedo electric organ is mainly located in the cytosol and has high affinity for the methyl donor S-adenosyl-L-methionine and for the nicotinic acetylcholine receptor protein. 24 references. (Author abstract)

001319 Knepel, W.; Anhut, H.; Nutto, D.; Hertting, G. Dept. of Pharmacology, University of Freiburg i. Br., Hermann-Herder-Str. 5, D-7800 Freiburg i. Br., West Germany **Evidence that vasopressin is involved in the isoprenaline-induced beta-endorphin release.** European Journal of Pharmacology. 68(3):359-363, 1980.

Isoprenaline stimulated the release of vasopressin and beta-endorphin immunoreactivity (BEI) in conscious rats. The isoprenaline-induced increase in BEI was diminished by about 50% in rats pretreated with a vasopressin antagonist and in Brattleboro rats with a hereditary lack of vasopressin. Results suggest that the isoprenaline-induced release of BEI is mediated in part by vasopressin. 10 references. (Author abstract modified)

001320 Koida, Masao; Nakamuta, Hiromichi; Furukawa, Shinichi; Orlowski, Ronald C. Dept. of Pharmacology, Faculty of Pharmaceutical Sciences, Nagasaki University, Nagasaki 852, Japan **Abundance and location of 125-I-salmon calcitonin binding site in rat brain.** Japanese Journal of Pharmacology. 30(4):575-577, 1980.

Binding sites for calcitonin were demonstrated in male Wistar rat brain. The binding of 125I-salmon calcitonin-I was highest in the hypothalamus and lowest in the cerebellum and cortex. Even the cortex had more calcitonin binding sites than the kidney, a target tissue for peripheral hormone action of calcitonin. Scatchard analysis of whole brain homogenate revealed at least two types of binding sites for calcitonin. 13 references.

001321 Koss, M. C. Dean McGee Eye Institute, P. O. Box 26901, Oklahoma City, OK 73190 **Methyldopa produces central inhibition of parasympathetic activity in the cat.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(2):135-139, 1980.

Alpha-methyldopa (10 to 100mg/kg i.v.) produced a dose-dependent pupillary dilation in anesthetized cats, but only when parasympathetic innervation to the iris was intact. Yohimbine hydrochloride (0.5mg/kg i.v.) was able to prevent or reverse the mydriasis induced by alpha-methyldopa. Phenoxybenzamine (2.5mg/kg i.v.) antagonized dilation produced by adrenaline (0.3 to 10.0mcg/kg i.v.), but not that induced by alpha-methyldopa. Results suggest that alpha-methyldopa produced mydriasis via central inhibition of tonic outflow from the oculomotor nucleus and that an alpha-adrenergic mechanism may be involved. 25 references. (Author abstract modified)

001322 Kuo, Che-Hui; Yoshida, Hiroshi. Dept. of Pharmacology, Cancer Research Institute, Kanazawa University, Takaramachi, Kanazawa 920, Japan **Ascorbic acid, an endogenous factor required for acetylcholine release from the synaptic vesicles.** Japanese Journal of Pharmacology. 30(4):481-492, 1980.

An acetylcholine (ACh) releasing factor purified from Sprague-Dawley rat synaptosomal cytoplasm by column chromatography was identified as ascorbic acid. A low concentration of L-ascorbic acid induced release of ACh from isolated synaptic vesicles in the presence of adenosine triphosphate, magnesium chloride, and calcium chloride. The ACh release induced by L-ascorbic acid could be dissociated from formation of lipid peroxide. Results are discussed in relation to the physiological role of L-ascorbic acid in the brain. 32 references. (Author abstract modified)

001323 Kusaka, Masaru; Horikawa, Akiko; Meshi, Teruhiko; Maruyama, Yuji. Maruyama: Section of Pharmacology, Japan Upjohn Research Laboratories, 168 Ohyagi, Takasaki Gunma 370, Japan **Interaction of triazolam with desipramine: effects of single and repeated treatment on certain pharmacologic responses and brain catecholamine levels.** Psychopharmacology. 70(3):255-261, 1980.

The effects of single and repeated doses of triazolam and desipramine alone and in combination on certain pharmacologic responses and brain catecholamine levels in rats were investigated. Results include: 1) triazolam and DMI given alone and in combination were synergistic with pentobarbital (PB) hypnosis; 2) repeated treatment with DMI alone repressed bodyweight gain, and triazolam potentiated this anorectic effect; 3) triazolam induced muscle relaxation acutely, but was not affected by concomitant DMI treatment; and 4) triazolam and DMI given in combination produced hypothermia although the drugs given separately did not. Development of tolerance to hypothermia and to anorectic effects produced by triazolam and DMI significantly decreased norepinephrine (NE) levels in the hypothalamus as compared to the repeated treatment with triazolam, and significantly increased NE and dopamine (DA) levels in the striatum and DA levels in the cortex, as compared to the single treatments. 25 references. (Author abstract)

001324 Labrie, F.; Di Paolo, T.; Raymond, V.; Ferland, L.; Beaulieu, M. MRC Group in Molecular Endocrinology, Le Centre Hospitalier de l'Universite Laval, Quebec, Canada **The pituitary dopamine receptor.** Advances in Biochemical Psychopharmacology. 23:217-227, 1980.

Studies of the binding characteristics of the pituitary dopamine (DA) receptor and the effects of sex steroids on pituitary

DA receptor action are reviewed. Studies of radioligand binding to rat and bovine anterior pituitary membranes indicate that the binding of dopaminergic drugs to the pituitary DA receptor is best described by a multiple subsites complex. The release of prolactin in cultured rat pituitary cells is inhibited by DA and DA agonists and this inhibition is reversed by neuroleptic drugs. Estrogens exert potent antidopaminergic effects on prolactin secretion in cultured anterior pituitary cells and in vivo. 26 references.

001325 Ladinsky, Herbert; Consolo, Silvana; Samanin, Rosario; Algeri, Sergio; Ponzio, Franca. Istituto di Richerche Farmacologiche I-20157 Milano, Italy **Long-term effects of haloperidol, clozapine, and methadone on rat striatal cholinergic and dopaminergic dynamics.** Advances in Biochemical Psychopharmacology. 24:259-265, 1980.

The effects of acute and chronic treatments of clozapine and methadone on the cholinergic and dopaminergic systems in striatum were compared with haloperidol treatments in similar situations. Cross-tolerance was also studied to obtain more information of possible common sites of action of these drugs (despite their different pharmacological profiles). Tolerance to the cholinergic response to haloperidol was complete by 28 days of treatment, but not at 11 days. It is argued that dynamic internal adjustments of dopamine (DA) receptor disuse must be fully operative before this postsynaptic effect of haloperidol becomes completely tolerated. By contrast, the development of tolerance to the haloperidol-induced increase in DA metabolites was still not complete after 28 days. In these conditions, homologous tolerance to the clozapine-induced effects on the dopaminergic and cholinergic systems was not produced. Prolonged administration of haloperidol induced homologous and one way cross-tolerance with clozapine on the dopaminergic response suggesting that the increases in homovanillic acid and dihydroxyphenylacetic acid by clozapine may be a consequence of DA receptor blockade. Data are reported which are consistent with the hypothesis that methadone can activate the serotoninergic system in the brain and that serotonergic neurons in the striatum can exert inhibitory influence on cholinergic neurons intrinsic to this area. 22 references.

001326 Laduron, Pierre. Dept. of Biochemical Pharmacology, Janssen Pharmaceutica, B-2340 Beerse, Belgium **Dopamine receptor: from synaptic membranes to solubilization.** Advances in Biochemical Psychopharmacology. 24:81-87, 1980.

A series of studies of the dopamine (DA) receptor in synaptic membranes and various solutions is described. To characterize the membrane structures bearing DA receptors, a microsomal fraction was prepared from striata of rats injected with 3H-spiperone and then treated with 0.2% digitonin. From these results, it is concluded that the synaptic membranes bearing DA receptors belong to a class of membranes having the same characteristics as the plasma membranes, and thus contain a large proportion of cholesterol. Results of fractionation studies do not support the classic assumption based on the synaptosomal concept that postsynaptic membranes are attached to nerve endings. In contrast to rat striatum, spiperone binding sites solubilized by digitonin treatment from dog striatum retain the high affinity characteristics of dopamine receptors. 15 references.

001327 LaHoste, Gerald J.; Olson, Richard D.; Olson, Gayle A.; Kastin, Abba J. Olson: Dept. of Psychology, University of New Orleans, New Orleans, LA 70122 **Effects of Pavlovian conditioning and MIF-1 on the development of morphine tolerance in rats.** Pharmacology Biochemistry and Behavior. 13(6):799-804, 1980.

The effects of Pavlovian conditioning and melanocyte stimulating hormone inhibiting factor 1 (MIF-1) on the development of morphine tolerance in rats were investigated. Results are not easily explained by traditional pharmacological interpretations of morphine tolerance, and imply that conditioning processes apparently influence the development of tolerance to the analgesic effect of morphine. The interspersing of control injections between successive morphine injections severely retarded the development of tolerance to morphine over the course of the 15 administrations. This suggests that these conditioning factors may be manipulated in such a way as to provide potent analgesia without the rapid development of tolerance, a finding which may have clinical relevance. 21 references.

001328 Lakoski, Joan M.; Mohrland, J. S.; Gebhart, G. F. Dept. of Pharmacology, University of Iowa, Iowa City, IA 52242 **The effect of morphine on the content of serotonin, 5-hydroxyindole acetic acid and substance-P in the nuclei raphe magnus and reticularis gigantocellularis.** Life Sciences. 27(25&26):2639-2644, 1980.

The content of serotonin (5-HT), 5-hydroxyindole-3-acetic acid (5-HIAA), and substance-P (SP) in nucleus raphe magnus (NRM) and nucleus reticularis gigantocellularis (NGC) was examined 60 min following the intraperitoneal administration of morphine or saline. The content of 5-HT and 5-HIAA in tissue punches of NRM and NGC was unaltered by the morphine treatment. The content of SP, however, in tissue punches of NRM was significantly elevated 60 min following the administration of morphine. 39 references. (Author abstract)

001329 Lansdown, M. J. R.; Nash, H. L.; Preston, P. R.; Wallis, D. I.; Williams, R. G. Dept. of Physiology, University College, P.O. Box 78, Cardiff CF1 1XL, Wales **Antagonism of 5-hydroxytryptamine receptors by quipazine.** British Journal of Pharmacology. 68(3):525-532, 1980.

The effect of quipazine on 5-hydroxytryptamine (5-HT) receptors was studied in the isolated rabbit superior cervical ganglion and rat spinal cord and stomach. Results showed that quipazine may be an effective antagonist at 5-HT receptors in various tissues. No other compound was as effective as quipazine in antagonizing the ganglionic deplorizing action of 5-HT. 23 references. (Author abstract modified)

001330 Lapin, I. P. Laboratory of Psychopharmacology, Bekhterev Psychoneurological Research Institute, Nevski Prospect 88, kv 136 Leningrad, 191025, USSR **Adrenergic nonspecific potentiation of yohimbine toxicity in mice by antidepressants and related drugs and antiyohimbine action of antiadrenergic and serotonergic drugs.** Psychopharmacology. 70(2):179-185, 1980.

Adrenergic nonspecific potentiation of yohimbine toxicity in mice by antidepressants and related drugs and antiyohimbine action of antiadrenergic and serotonergic drugs were investigated. Thirteen imipramine-like antidepressants and three anticholinergics potentiated yohimbine toxicity in mice. The strongest potentiation was observed after the nonantidepressant adrenergic compound AW 151129. Monomethyl derivatives were significantly stronger than their parent dimethyl compounds. The inhibitor of brain serotonin synthesis p-chlorophenylalanine and a depletor of serotonin and catecholamine synthesis, reserpine, enhanced yohimbine toxicity whereas serotonin and its precursors tryptophan and 5-hydroxytryptophan prolonged survival time. Thus, a test of yohimbine potentiation toxicity in mice reveals an adrenergic component of pharmacological activity of antidepressants. The predictive value of this test is limited similarly to antihypothermic tests of antagonisms to reserpine and the related drugs apomorphine and 5-hydroxytryptophan. 18 references. (Author abstract modified)

001331 Lavretskaya, E. F.; Tat'yanenko, L. V.; Moshkovskiy, Yu. Sh.; Raykhman, L. M.; Kotel'nikova, R. V.; Vasyukova, N. V. Inst. po biologicheskim ispytaniyam khimicheskikh coyedineniy, Moscow, USSR **/Certain mechanisms of the action of psychotropic drugs on transport ATPases./** O nekotorykh mekhanizmakh deystviya psikhotropnykh preparatov na transportnyye ATF-azy. Farmakologiya i Toksikologiya. 43(3):292-295, 1980.

Certain mechanisms of the action of psychotropic drugs on transport ATPases were studied using tissue from rabbits. Results show that psychotropic drugs, especially neuroleptics, reversibly and noncompetitively inhibit the activity of Na, K-ATPase of the brain and Ca, Mg-ATPase of the sarcoplasmatic reticulum. The inhibitory effect is more pronounced in relation to the sarcoplasmatic reticulum and less marked in relation to purified enzymatic preparations, and is not related to drug binding to sulfhydryl groups of the enzyme. The inhibitory action of the drugs declines or completely disappears after treating the membranous preparations with phospholipase-A. Results of the examination of EPR spectra of lipid spin labels confirm that psychotropic drugs have a predominant effect on the lipid structure of the membrane. 13 references. (Journal abstract modified)

001332 Lebrecht, Urszula; Nowak, J. Z. Dept. of Biogenic Amines, Institute of Pharmacology, Polish Academy of Sciences, 60, Narutowicza St., 90-136 Lodz, Poland **Effect of single and repeated electroconvulsive shock on serotonergic system in rat brain -- I. Metabolic studies.** Neuropharmacology. 19(11):1049-1053, 1980.

The effects of single and repeated (once daily for 10 days) electroconvulsive shock (ECS) on hypothalamic and forebrain levels of 5-hydroxytryptamine (5-HT) and 5-hydroxyindoleacetic acid (5-HIAA) in male Wistar rats pretreated with various drugs were determined. In rats pretreated with iproniazide or iproniazide plus L-tryptophan, the accumulation of 5-HT was significantly increased in both brain regions 1 hour after single or repeated ECS, but not 24 or 48 hours after shock. Both ECS regimens increased the disappearance of 5HT in rats treated with p-chlorophenylalanine. Single and repeated ECS also increased the 5-HIAA levels in hypothalamus and forebrain of rats pretreated with probenecid or given no drug treatment. Results indicate that ECS increases the synthesis and catabolism of 5-HT in rat brain 1 hour after shock. 22 references. (Author abstract modified)

001333 Lee, E. H. Y.; Geyer, M. A. Dept. of Neuroscience, School of Medicine, University of California, San Diego, La Jolla, CA 92093 **Persistent effects of chronic administration of LSD on intracellular serotonin content in rat midbrain.** Neuropharmacology. 19(10):1005-1007, 1980.

The effects of acute and chronic administration of LSD on the intracellular serotonin content of raphe neurons in rat midbrain were compared using a cytofluorimetric measure of serotonin based on fluorescence fading. Consistent with previous reports, acute treatment with LSD preferentially increased intracellular serotonin levels in both the dorsal and median raphe nuclei. Similar increases in serotonin were observed following 14 daily injections of LSD and 24 hr after the last of 13 daily injections. No significant differences were found between the effects of acute and chronic LSD treatments on any of the cytofluorimetric measures of serotonin. Together with the results from previous electrophysiological and behavioral studies, these findings indicate that little or no tolerance occurs to the effects of LSD on serotonergic neurons. 12 references. (Author abstract modified)

001334 Lee, M. K.; Coupar, I. M. School of Pharmacology, Victorian College of Pharmacy Ltd., 381 Royal Parade, Parkville, Victoria, Australia, 3052 **Opiate receptor-mediated inhibition of rat jejunal fluid secretion.** Life Sciences. 27(24):2319-2325, 1980.

The relative potencies of prostaglandin (PG)E1 and vasoactive intestinal peptide (VIP) as secretory agents were investigated, and the possibility that the VIP/morphine interaction is antagonized by the opiate antagonist naloxone was examined. VIP is more potent and produces a greater effect compared to PGE1 as a stimulant of fluid secretion in the rat jejunum. VIP-stimulated fluid secretion is inhibited by morphine in a dose-related fashion and naloxone antagonizes this inhibitory action of morphine, suggesting the effect is mediated by an opiate receptor. Pretreatment of rats with indomethacin and naloxone does not reveal prostaglandin or enkephalins respectively as tonic modulators of fluid transport. The possibility of a reflex release of enkephalins when challenged with a secretagogue was studied by the use of naloxone. Results indicate that VIP does not release an enkephalin-like substance, and there is no conclusive evidence of release by PGE1. 27 references. (Author abstract modified)

001335 Lee, Nancy M.; Craves, Frederick B.; Stokes, K. Bradley. Dept. of Pharmacology, University of California, San Francisco, CA 94143 **Effect of opiates on macromolecule biosynthesis.** Advances in Biochemical Psychopharmacology. 20:521-539, 1979.

The effect of chronic morphine treatment on the transcription of DNA to RNA and the translation of RNA to protein is discussed. In vitro studies have shown that chromatin template activity, cell-free protein synthesis, and aminoacylation are increased with reactants derived from chronically-morphinized animals, compared to control animals. Phospholipid content, chromatin phosphorylation, and conditions for maximal aminoacylation in tolerant/dependent animals also differ from controls, suggesting basic changes in the regulation of macromolecule synthesis during chronic morphine administration. The possibility that a new species of protein is synthesized in the brain of tolerant/dependent animals is discussed. 85 references.

001336 Lee, Tony J. -F. Dept. of Pharmacology, Southern Illinois University, School of Medicine, P. O. Box 3926, Springfield, IL 62708 **Direct evidence against acetylcholine as the dilator transmitter in the cat cerebral artery.** European Journal of Pharmacology. 68(3):393-394, 1980.

Cat cerebral arteries dilated in response to transmural nerve stimulation (TNS) and exogenous acetylcholine (ACh). These arteries began to constrict only when the ACh concentration exceeded 0.00003M. In contrast, arteries damaged by mechanical rubbing showed only the constriction response to ACh even though TNS continued to induce dilation. Atropine blocked ACh-induced relaxation and constriction but did not affect TNS-induced relaxation. Results indicate that ACh-induced vasodilation is dependent on intact endothelial cells. 4 references.

001337 Lerman, Sheldon H.; Jacobowitz, David M.; Mason, G. Robert; Garber, Harvey I.; Ormsbee, Herbert S., III. Ormsbee: University of Maryland Hospital, Box 85, 22 South Greene Street, Baltimore, MD 21201 **Gastric and pyloric motor response to sympathetic nerve stimulation after chemical sympathectomy. (Unpublished paper).** Bethesda, Md, NIMH, 1980. 20p.

The effect of electrical stimulation of the greater splanchnic nerve on gastric and gastroduodenal motility in 6-OHDA pretreated anesthetized dogs was evaluated. Biopsies from the stomach, pylorus, and duodenum were obtained and analyzed by catecholamine fluorescence microscopy. Degeneration of adrenergic terminals in Auerbach's plexus was complete at 1 week. The majority of stimulations in control dogs or dogs

treated with 6-OHDA produced contractions in the gastric body, antrum, and pylorus and relaxation or inhibition in the duodenum. The excitatory motor responses in the gastric body, antrum, and pylorus were unaffected by the administration of hexamethonium. Following atropine administration, contractions due to splanchnic nerve stimulation were virtually abolished in the antrum, pylorus, and duodenum and were reduced in number in the gastric body. Relaxation and inhibition were no longer observed in the duodenum after atropine. The greater splanchnic nerve appears to contain both excitatory and inhibitory cholinergic pathways to the musculature of the stomach, pylorus, and duodenum. 19 references. (Author abstract)

001338 Lesse, Henry. Dept. of Psychiatry and Biobehavioral Sciences, School of Medicine, University of California, Los Angeles, CA 90024 **Prolonged effects of cocaine on hippocampal activity.** Communications in Psychopharmacology. 4(3):247-254, 1980.

Hippocampal afterdischarge thresholds and durations were reduced in cats 10 minutes to 16 hours after intramuscular injection of 5mg/kg cocaine. Peak effects occurred within 30 to 60 minutes, but significant electrophysiological effects persisted for 16 hours. It is suggested that the repetitive administration characteristic of human cocaine use may result in cumulative electrophysiological effects with progressive alterations in limbic functions. 14 references. (Author abstract modified)

001339 Lesse, Henry; Collins, Jeremiah P. Neuropsychiatric Institute, 760 Westwood Plaza, Los Angeles, CA 90024 **Differential effects of cocaine on limbic excitability.** Pharmacology Biochemistry and Behavior. 13(5):695-703, 1980.

The effects of cocaine on the initiation and maintenance of electrically-induced limbic afterdischarges (AD) were studied in cats, and current thresholds for evoking AD in the hippocampus, amygdala, and septal region were determined following alternating saline and cocaine administrations. Three subconvulsant doses were tested at 96-hour intervals. Results suggest that cocaine has preferential excitatory effects on closely-related limbic structures, increasing the sensitivity of the hippocampus and amygdala to direct electrical stimulation. A concurrent, independent inhibitory action is implied by the reduced duration of limbic afterdischarges. The absence of progressive electrophysiological responses suggests that there is no potentiation of limbic excitatory effects following the repeated administration of doses which do not induce focal epileptiform activity. 58 references. (Author abstract modified)

001340 Levine, M. S.; Hull, C. D.; Garcia-Rill, E.; Erinoff, L.; Buchwald, N. A.; Heller, A. Mental Retardation Research Center, University of California, Los Angeles, CA 90024 **Long-term decreases in spontaneous firing of caudate neurons induced by amphetamine in cats.** Brain Research. 194(1):263-268, 1980.

A long-lasting slowing of the spontaneous firing of caudate neurons and a reduction in caudate dopamine concentration were observed in intact cats given three doses of d-amphetamine sulfate (1, 2, and 4mg/kg i.p.) with interdose intervals of at least 10 days. The amphetamine-induced slowing of caudate unit activity was prevented by neonatal lesions of the nigrostriatal pathway. These lesions, which damaged the medial forebrain bundle and medial aspect of the internal capsule, did not themselves alter the spontaneous firing rate of caudate neurons. 24 references.

001341 Levy, Robert Michael. Stanford University **Pineal interactions with the central nervous system: neuroendocrine implications. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):1735-B, 1980. Ann Arbor, Univ. Microfilms No. 8024701, 440p., 1980.

A number of manipulations known to alter the function of the pineal gland were performed on rat and bovine brain, and the subsequent effects on the level of pituitary beta-endorphin were assayed. Results indicate that in those conditions where cerebrospinal fluid melatonin levels are decreased, pituitary levels of beta-endorphin are significantly elevated. Central melatonin administration produced a significant decrease in pituitary beta-endorphin. Studies were performed to determine whether brain beta-endorphin was subject to pineal modulation. The pineal gland appears to be involved in the regulation of both hypothalamic and pituitary beta-endorphin. Exogenous opiates and opiate antagonists were shown to alter pineal melatonin content. The studies reveal a complex interaction between pineal principles and the endogenous opiate peptide systems, and suggest the presence of a physiologically important, feedback regulated neuroendocrine system. (Journal abstract modified)

001342 Leysen, J. E. Dept. of Biochemical Pharmacology, Janssen Pharmaceutica, B-2340 Beerse, Belgium **Unitary dopaminergic receptor composed of cooperatively linked agonist and antagonist subunit binding sites.** Communications in Psychopharmacology. 3(6):397-410, 1979.

The stereospecific binding of 3H-apomorphine and of 3H-spiperone in female Wistar rat striata revealed identical subcellular distribution in differential and density gradient centrifugation. Both were enriched in the microsomal fraction and apparently occurred on plasma membranes. Ligand binding was not altered by 6-hydroxydopamine lesions of the nigrostriatal pathway, but binding of both ligands was reduced by 30% by kainic acid lesions in the striatum. Dopamine antagonists bound with similar affinity to 3H-apomorphine and 3H-spiperone binding sites, but agonists showed a higher affinity for the 3H-apomorphine sites. Analysis of 3H-ligand saturation binding curves in the presence of various concentrations of nonlabeled agonist and antagonist revealed competitive inhibition for agonist/agonist and antagonist/antagonist interactions, but not for agonist/antagonist interactions. Results suggest the existence of a unitary dopaminergic receptor composed of cooperatively linked agonist and antagonist subunit binding sites and localized agonist and antagonist subunit binding sites and localized on plasma membranes of different types of neurons in rat striatum. 23 references. (Author abstract modified)

001343 Liang, Nina Yen. University of Kansas **Drug-induced release of dopamine from corpus striatum. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):1735-B, 1980. Ann Arbor, Univ. Microfilms No. 8026719, 139p., 1980.

The release of (3H)dopamine produced by amphetamine was compared to releases produced by unlabeled dopamine and by fenfluramine using male Sprague Dawley rats. It is hypothesized that the efflux of dopamine from dopaminergic nerve endings may utilize a carrier mediated transport system, and this efflux can be accelerated by amphetamine which utilizes the carrier mediated uptake system to enter into neurons. It was found that the quality of amphetamine-induced release of (3H)dopamine is similar to that of the release produced by unlabeled dopamine but is much different from that of the fenfluramine. It is suggested that amphetamine, like unlabeled dopamine, may release (3H)dopamine by utilizing the dopamine carrier system to enter into neurons. Once inside the neuron, amphetamine may displace (3H)dopamine from binding sites and the displaced (3H)dopamine then utilizes the reversal of the dopamine uptake carrier system to come out of the nerve endings. (Journal abstract modified)

001344 Linseman, Mary Ann; Grupp, Larry A. Neurobiology Section, Addiction Research Foundation, 33 Russell St., Toronto, Ontario M5S 2S1, Canada **Acute and chronic opiate effects on**

single units and EEG of medial thalamus and hippocampus: a latency analysis. Psychopharmacology. 71(1):11-20, 1980.

Medial thalamic (MT), hippocampal (HPC) EEG, single unit activity, and frontal cortical (CTX) EEG were recorded following i.v. infusions of 0.625mg/kg morphine in drug naive rats, and following 0.0125mg/kg naloxone in morphine-dependent paralyzed rats. Particularly, the latency of the response was analyzed in relation to the appearance of high voltage bursts in the CTX EEG and thereby to assess the possible primacy of the effects. In MT, the predominant effect of morphine on units of naive animals was a decrease in activity; that of naloxone in dependent animals, an increase in activity. HPC units were relatively unresponsive to morphine, but the HPC EEG often showed marked spiking following the infusion that generally preceded the appearance of spindles in the CTX. Naloxone caused increases and decreases in HPC unit activity, but these changes as well as those of the HPC EEG (also to theta) generally followed corresponding changes in the CTX EEG. The possibility that both areas might be primary sites of action of morphine, but not naloxone, is discussed. 31 references. (Author abstract modified)

001345 Lloyd, K. G.; Worms, P. Research Dept., Synthelabo-L.E.R.S., F-92220 Bagneux, France **Sustained gamma-aminobutyric acid receptor stimulation and chronic neuroleptic effects.** Advances in Biochemical Psychopharmacology. 24:253-258, 1980.

The involvement of GABA neurons in the induction of tolerance to haloperidol was investigated. Evidence for the tonic inhibitory control by GABA of nigroneostriatal dopamine (DA) neuron activity is provided. It appears that this control is maximally effective when DA neurons are activated following the acute administration of neuroleptics. It is also concluded that the homeostatic compensation to sustained DA receptor blockade (resulting in tolerance to the cataleptic action of neuroleptics) is inhibited by prolonged stimulation of GABA receptors; thus one of the necessary requirements for the establishment of this compensation is a reduced GABA synaptic activity. It appears that GABA receptors are involved not only in the control of DA neuron activity, but also in the control of DA receptor mediated events at a point distal to the DA neuron. 32 references. (Author abstract modified)

001346 Loew, Dieter M.; Vigouret, Jean-Marie; Jaton, Annelise. Preclinical Research, Pharmaceutical Division, Sandoz Ltd., CH-4002 Basel, Switzerland **Neuropharmacology of bromocriptine and dihydroergotoxine (Hydergine).** Advances in Biochemical Psychopharmacology. 23:63-74, 1980.

The effects of dihydroergotoxine and bromocriptine on serotonergic and dopaminergic mechanisms are reviewed, based on studies in whole animals. Bromocriptine appears to activate dopaminergic systems, particularly the nigrostriatal pathway, which may provide the pharmacological basis for its therapeutic use in the treatment of parkinsonism. Dihydroergotoxine has less pronounced effects in the nigrostriatal pathway, but activates dopaminergic systems in the pontomedullary region as well as serotonergic systems linked to the raphe nucleus. 45 references.

001347 Loonen, A. J. M.; Soudijn, W. Soudijn: Dept. of Pharmaceutical Chemistry, University of Amsterdam, Plantage Muidergracht 24, 1018 TV Amsterdam, Netherlands **Effects of haloperidol on potassium-induced release of radiolabeled neurotransmitters from rat cerebrocortical slices in vitro.** Archives Internationales de Pharmacodynamie et de Therapie. 247(1):43-58, 1980.

The effects of haloperidol, its neuroleptic congener R29800, spiperone, and haloperidol on the release of the following tritiated compounds: serotonin (5-HT), noradrenaline (NA), acetylcholine (ACh), and GABA, from male Wistar rat frontal cortical slices were studied in vitro. The agents augmented the spontaneous outflow of 3H-5-HT and 3H-NA, but had no marked effect on basal release of 3H-GABA or 3H-ACh. The depolarization-induced release of 3H-5-HT was more markedly affected than evoked release of the other radiolabeled transmitters. 37 references. (Author abstract modified)

001348 Lovenberg, W.; Alphs, L.; Pradhan, S.; Bruckwick, E.; Levine, R. Section on Biochemical Pharmacology, NHLBI, NIH, Bethesda, MD 20205 **Long-term haloperidol treatment and factors effecting the activity of striatal tyrosine hydroxylase.** Advances in Biochemical Psychopharmacology. 24:9-15, 1980.

The effects of long-term and short-term treatment of rats with large doses of haloperidol on several parameters of protein phosphorylation capacity and tyrosine hydroxylase activity were examined. Topics discussed include: the role of protein phosphorylation and the short-term effects of neuroleptics on tyrosine hydroxylase; long-term effects of neuroleptics on the kinetics of tyrosine hydroxylase; regulatory factors for tyrosine hydroxylase after 10 day treatment with haloperidol. It is concluded that long-term neuroleptic treatment results in adaptive changes in the dopamine synthesizing system of the striatum, and that the tendency is toward a suppression of the dopamine synthesis in response to neuroleptics and perhaps a decrease in basal activity of the dopamine synthesizing system. 20 references.

001349 MacDonald, John Ferguson; Wojtowicz, Jan Martin. Playfair Neurosciences Unit/Toronto Western Hospital, 399 Bathurst St., Toronto, Ontario, Canada M5T 2S8 **Two conductance mechanisms activated by applications of L-glutamic, L-aspartic, DL-homocysteic, N-methyl-D-aspartic, and DL-kainic acids to cultured mammalian central neurones.** Canadian Journal of Physiology and Pharmacology. 58(11):1393-1397, 1980.

Neurones of fetal mouse spinal cord or brain were grown dissociated in tissue culture, and intracellular recordings from single neurons demonstrated two types of conductance changes in response to application of L-glutamic acid and a number of structurally related compounds. In the presence of 10mM MgCl2, the responses consisted of an increase in membrane conductance. However, if this divalent cation was kept at ambient concentration, a decrease of membrane conductance was also noted (perhaps to potassium ions). Often this decrease in conductance was associated with the appearance of regenerative and spikelike potentials, even in the presence of tetrodotoxin. All amino acids tested with the exception of DL-kainic acid produced such a change in conductance. It is concluded that at least two distinct conductance mechanisms are linked to excitatory amino acid receptors. 17 references. (Author abstract modified)

001350 Magistretti, Pierre J.; Schorderet, Michel. School of Medicine, Dept. of Pharmacology, CH-1211 Geneva 4, Switzerland **Attempts to develop super- or subsensitivity of retinal dopamine receptors after various treatments with antagonists or agonists.** Advances in Biochemical Psychopharmacology. 24:181-184, 1980.

Attempts to modify the cyclic AMP responses in vitro after local (intravitreal) or systemic (intraperitoneal) injections of drugs having a target site of action at presynaptic and/or postsynaptic levels are described. After 6-hydroxydopamine (6-OHDA) injection, the extent of dopamine (DA)-induced accumulation of cyclic AMP in treated retinae was not different

from untreated retinae, the basal values of both groups being the same. Following intravitreal injection of DA or bromocriptine, no receptor sensitivity changes in retina were found. Absence of such modification of cyclic AMP responses, even when DA was substituted for bromocriptine, suggests that striatum and retina are two functionally distinct DA systems with a different neuronal type of organization. 13 references.

001351 Majocha, Ronald; Baldessarini, Ross J. Baldessarini: Dept. of Psychiatry, Harvard Medical School, Belmont, MA 02178 **Increased muscarinic receptor binding in rat forebrain after scopolamine.** European Journal of Pharmacology. 67(2/3):327-328, 1980.

The binding of tritiated quinuclidinyl benzylate (3H-QNB) was studied in cerebral cortical and striatal tissue from male Sprague-Dawley rats treated daily for 2 weeks with 5 pilocarpine nitrate (5.0mg/kg i.p.) or scoplamine bromide (0.2 or 2.0mg/kg i.p.). The muscarinic antagonist scopolamine induced a dose-dependent increase in the density of 3H-QNB binding sites, but pilocarpin had little effect. Results suggest that central muscarinic receptors may adapt to prolonged deprivation of the endogenous agonist. 5 references.

001352 Malikova, L. A.; Arefolov, V. A. Lab. neyrokhirurgicheskoy farmakologii Instituta farmakologii AMN SSSR, Moscow, USSR **/The effect of carbidine on dopamine turnover in the corpus striatum of the brains of rats./** Vliyaniye karbidina na krugooborot dofamina v polosatom tele mozga krys. Farmakologiya i Toksikologiya. 43(3):310-313, 1980.

The effect of carbidine on dopamine turnover in the corpus striatum of the brains of rats was studied by injecting intraperitoneally triphthazine, fluoracizin and fluphenazine in doses of 1 and 5 milligrams per kilogram, and carbidine in doses of 5 and 20 milligrams per kilogram. In 1 to 4 hours after injection the rats werre decapitated, and the corpus striatum was removed and examined. Results show that carbidine increases the level of homovanillic acid in the corpus striatum of the brains of rats. The changes in the level of homovanillic acid indicate the dopamine turnover. In terms of the intensity of this effect, carbidine proved inferior to the typical neuroleptics, triphthazine and fluphenazine. The antidepressant fluoracizin did not alter the level of homovanillic acid. Carbidine ranks between neuroleptics and antidepressants in terms of its effect on dopamine turnover. 10 references. (Journal abstract modified)

001353 Manier, D. Hal; Gillespie, David D.; Sulser, Fridolin. Tennessee Neuropsychiatric Institute, 1501 Murfreesboro-Road, Nashville, TN 37232 **Development of and recovery from subsensitivity of the noradrenergic cyclic AMP generating system in brain: effect of amphetamine following inhibition of its aromatic hydroxylation by Iprindole.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):113-118, 1980.

Amphetamine (10mg/kg b. i.d., twice a day for 2 days) did not alter the basal level of cyclic AMP or the neurohumoral response of the cyclic AMP generating system to noradrenaline (NA) in male Sprague-Dawley rats. However, amphetamine caused a significant reduction in responsiveness to NA and the beta-adrenergic agonist isoprenaline after inhibition of aromatic hydroxylation by iprindole. The concentration of NA required to produce half maximal cyclic AMP stimulation was not significantly altered. After discontinuation of drug treatments, recovery from adrenergic subsensitivity to NA was complete within 1 week in the limbic forebrain; adrenergic responsiveness in the cortex was only 65% of control value 3 weeks after drug discontinuation. The subsensitivity in both regions was linked to a decrease in the number of binding sites for 3H-dihydroalprenolol, and the different rates of recovery from noradrenergic subsensitivity were reflected in differences in the density of beta-adrenergic receptors in the two regions. 28 references. (Author abstract modified)

001354 Manina, A. A.; Kucherenko, R. P.; Mel'nikova, L. I.; Strelkov, R. B. Laboratory of Cytology, Research Institute of Experimental Medicine, Academy of Medical Sciences of the USSR, Leningrad, USSR **Subcellular reaction of the brain to hypoxia.** Neuroscience and Behavioral Physiology. 10(4):302-307, 1980.

Subcellular processes in brain tissue during hypoxia and the effect of hydroxybutyric acid (HBA) on these processes were investigated in rats. Rats were exposed for 30 min to reduced pressure (similar to that at 10,000 m altitude) either with or without HBA pretreatment (200mg/kg 40 min before exposure to reduced pressure). Rats were killed immediately or 12 h, 24 h, or 5 days after the treatment. Subcellular responses of the brain to hypoxia were found to be characterized by destructive and regenerative processes in the ultrastructures in neurons and glial cells. HBA pretreatment led to preservation of the energy potential of the cells, as reflected in the absence of any marked changes in the mitochondria and the appearance of numerous small organelles, the budding of new ones, and their concentration in different parts of the cytoplasm. 19 references.

001355 Marco, Emilio J.; Balfagon, Gloria; Marin, Jesus; Gomez, Bernardino; Lluch, Salvador. Depto. de Fisiologia, Facultad de Medicina, Universidad Autonoma, Madrid 34, Spain **Indirect adrenergic effect of histamine in cat cerebral arteries.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(3):239-243, 1980.

Histamine increased the outflow of tritium from cat cerebral arteries preloaded with 3H-noradrenaline. This increase was prevented by pretreatment with reserpine, by removal of both superior cervical ganglia 2 weeks before the experiment, or by the presence of cocaine or diphenhydramine in the organ bath. Histamine also elicited dose dependent contractions in the isolated posterior communicating artery. These contractions were reduced by the presence of diphenhydramine, cocaine, or phentolamine and by pretreatment with reserpine or removal of the superior cervical ganglia. Results suggest an indirect adrenergic mechanism is involved in the contractile response to histamine in cat cerebral arteries. 18 references. (Author abstract modified)

001356 Maresova, D.; Mares, P. Inst. of Physiology, Charles University, Albertov 5, 128 00 Prague 2, Czechoslovakia **Influence of carbamazepine on thalamo-cortical and hippocampocortical self-sustained after-discharges in rats.** Activitas Nervosa Superior. 22(3):217-218, 1980.

The influence of carbamazepine on thalamocortical and hippocampocortical self-sustained afterdischarges (SSAD) elicited by rhythmic thalamic stimulation was investigated. Fifteen sec stimulation series of 5 Hz and 8 Hz frequency were used with at least 3 min intervals between each experiment. Fifteen min following carbamazepine injection, the whole stimulation procedure was repeated three times, so that the last stimulation took place between the 40th and 45th min after carbamazepine. In the 11 rats which showed a serrated wave type of SSAD, carbamazepine produced a slow-wave sleep pattern, which SSAD either abolished or substantially shortened. It is concluded that this type of SSAD offers a model of partial seizures with complex symptomatology (temporal seizures). 4 references.

001357 Marin, Jesus; Salaices, Mercedes; Garcia, Antonio G. Depto. de Farmacologia y Terepeutica, Facultad de Medicina, Universidad Autonoma, C/Arzobispo Morcillo, s/n Madrid-34, Spain **Dopamine-beta-hydroxylase activity and noradrenaline con-**

tent in pial arteries of cat and goat. Journal of Pharmacy and Pharmacology. 32(1):64-65, 1980.

Dopamine-beta-hydroxylase (DBH) activity and noradrenaline (NA) content were high in the pial arteries of cats and goats. Values for both were about twice as high in goats as in cats. In both species, denervation by ganglionectomy or 6-hydroxydopamine treatment markedly reduced NA content and DBH activity. Results suggest that the brain vessels can synthesize their own NA and that the adrenergic innervation of pial arteries orginates in the superior cervical ganglia. 12 references.

001358 Marshall, Alice M.; Mishra, Ram K. Neuropharmacology Laboratory, Dept. of Psychiatry, McMaster University Medical Centre, Hamilton, Ontario, Canada L8S 4J9 **Dopamine-sensitive adenylate cyclase and dopamine/neuroleptic receptor binding: effect of neuroleptic drugs.** Advances in Biochemical Psychopharmacology. 24:153-157, 1980.

The effects of chronic administration of haloperidol and chlorpromazine on dopamine receptor binding properties, dopamine sensitive adenylate cyclase, and stereotypic behaviors were investigated. Results show that following chronic treatment with haloperidol or chlorpromazine, the behavioral response (stereotypy and locomotor activity) of rats to a small dose of apomorphine was greatly increased. These findings are in agreement with previous results showing an increased functional responsiveness to apomorphine, amphetamine, and methylphenidate in the withdrawal phase after long-term treatment with drugs affecting catecholamine synaptic mechanisms in the CNS. Dopamine stimulated adenylate cyclase activity was increased significantly following either haloperidol or chlorpromazine treatment. Results are discussed in relation to the etiology of tardive dyskinesia. 16 references.

001359 Martin, Arnold R.; Kim, Sun H.; Yamamura, Henry I.; Horn, Alan S. Dept. of Pharmaceutical Sciences, College of Pharmacy, Tucson, AZ 85721 **Conformationally restricted phenothiazine neuroleptics. 1. 3-(Dimethylamino) 1,2,3,4-tetrahydroazepino(3,2,1-kl) phenothiazine.** Journal of Medicinal Chemistry. 23(8):938-941, 1980.

In an exploratory study of conformationally restricted phenothiazine neuroleptics, a rigid analogue of promazine, 3-(dimethylamino)1,2,3,4-tetrahydroazepino(3,2,1-kl) phenothiazine, was prepared by reductive amination of the corresponding ketone. An X-ray crystallographic study revealed that the seven membered ring of the hydrochloride salt of the synthesized compound exists as a half chair-like form with the dimethyl ammonium group in an equatorial-like conformation. The molecule was approximately one-half as active a promazine as an inhibitor of (3H)spiperone binding in rat corpus striatal homogenates. In homogenates obtained from calf caudate tissue, however, it was only about one twentieth as active as promazine as an inhibitor of (3H)spiperone binding. As a stimulatory of homovanillic acid synthesis in rat corpus striatum in vivo, it was about one tenth as active as promazine. 31 references. (Author abstract modified)

001360 Martorana, P. A.; Nitz, R.-E. Pharmakologische Abt., Cassella AG, Hanauer Landstr. 526, D-6000 Frankfurt/Main 61, West Germany **The new antidepressant pirlindole: a comparison with imipramine and tranylcypromine.** Arzneimittel-Forschung. 29(6):946-949, 1979.

The new antidepressant 2,3,3a,4,5,6-hexahydro-8-methyl-1H-pyrazino(3,2,1-j,k)carbazole hydrochloride (pirlindole) was compared in rats and mice to imipramine and tranylcypromine. Pirlindole antagonized in a dose-related manner reserpine-induced ptosis and hypothermia and it was less potent than tranylcypromine and more potent than imipramine. Its duration of action was double that of imipramine but shorter than that of tranylcypromine. Pirlindole antagonized both tetrabenazine-induced ptosis and catalepsy at similar doses. Pirlindole was inactive against fluphenazine-induced catalepsy and was slightly more potent than imipramine, but less potent than tranylcypromine in immobility tests. Pirlindole and imipramine had similar LD50s, and, contrary to imiprimine but similar to tranylcypromine, did not antagonize oxotremorine-induced tremor. Pirlindole and tranylcypromine potentiated tryptamine and 1,5-hydroxytryptophan induced symptomatology. These results show that pirlindole is quantitatively and qualitatively different from imipramine and tranylcypromine. 12 references. (Journal abstract modified)

001361 Mateenuddin, M.; Brahmapurikar, M. T.; Sadre, N. L. Sadre: Dept. of Pharmacology, Medical College, Aurangabad, 431 001 Maharashtra, India **Effect of repeated electroconvulsive shocks (ECS) on subthreshold doses of some CNS stimulants.** Archives Internationales de Pharmacodynamie et de Therapie. 246(1):118-121, 1980.

Male Haffkine mice were give daily electroconvulsive shocks (ECS) for 7 days prior to treatment with picrotoxin or pentylenetetrazol (PTZ). The ECS pretreatment significantly decreased the time to onset of convulsions in the PTZ group, but not in mice treated with picrotoxin. ECS significantly increased mortality in both drug groups, compared to controls treated with drugs alone. Results suggest that ECS increases postsynaptic sensitivity or neuronal sensitivity. 8 references. (Author abstract modified)

001362 Mattila, Jyrki; Mannisto, Pekka T. Dept. of Pharmacology, University of Helsinki, Siltavuorenpenger 10 A, SF-00170 Helsinki 17, Finland **Modification of GABAergic activity and thyrotropin secretion in male rats.** Acta Pharmacologica et Toxicologica. 47(4):241-248, 1980.

Basal thyrotropin (TSH) secretion in male Sprague-Dawley rats was increased by muscimol and decreased by baclofen, aminooxyacetic acid (AOAA), and bicuculline. Muscimol, AOAA, and baclofen reversed cold stimulated TSH secretion. AOAA, GABA, and bicuculline failed to alter the stimulation of TSH secretion by thyrotropin releasing hormone. GABA had no effect on basal TSH when injected into the third ventricle or medial basal hypothalamus, but inhibited the TSH cold response when infused into the latter structure. Results suggest that GABA pathways may have an inhibitory effect on the stimulated TSH secretion in male rats. 29 references. (Author abstract modified)

001363 Maysov, N. I.; Tolmacheva, N. S. Lab. neyrokhimicheskoy farmakologii Instituta farmakologii AMN SSSR, Moscow, USSR /**The effect of psychotropic substances and narcotic analgesic drugs on 14C-noradrenaline uptake by synaptosomes of the cerebral cortex of rats.**/ Vliyaniye psikhotropnykh veshchestv i narkoticheskikh anal'getikov na zakhvat noradrenalina-14C sinaptosomami kory mozga krys. Farmakologiya i Toksikologiya. 43(3):302-306, 1980.

The effect of psychotropic substances and narcotic analgesic drugs on 14C-noradrenaline uptake by synaptosomes of the cerebral cortex of rats was studied, examining the effect of different groups of neurotropic substances on labeled noradrenaline and gamma-aminobutyric acid (GABA) uptake. Each group of the test compounds had specific qualitative and quantitative features of action on these processes. Results show that psychostimulants actively inhibit noradrenaline uptake without changing GABA uptake. In contrast, neuroleptics exert a pronounced inhibitory effect on GABA uptake and have insignificant noradrenaline accumulation. Antidepressants are very potent while narcotic analgesic drugs are less potent inhibitors of the accu-

mulation of both neuromediators. Morphine and nalorphine have no effect on these processes. 15 references. (Journal abstract modified)

001364 McCall, R. B.; Aghajanian, G. K. Dept. of Psychiatry, Yale University School of Medicine, 34 Park St., New Haven, CT 06508 **Denervation supersensitivity to serotonin in the facial nucleus.** Neuroscience. 4:1501-1510, 1979.

The mechanism for the development of denervation supersensitivity to serotonin (5-HT) in facial nucleus of the rat was investigated. Serotonergic denervation was accomplished chemically by injection of 200 mcg of 5,7-dihydroxytryptamine into the lateral ventricle. The response of facial motoneurons to microiontophoretic application of 5-HT, 5-methoxydimethyltryptamine and norepinephrine was determined by extracellular unit recording. There was a marked increase in the sensitivity to 5-HT 1 day following lesions. Histochemical fluorescence indicated that 5-HT containing terminals were destroyed at this time. In contrast, supersensitivity to 5-methoxydimethyltryptamine took 7 days to develop following lesions. The 5-HT uptake inhibitor, fluoxetine, potentiated the response of motoneurons to 5-HT in control animals but not in lesioned rats. The supersensitivity to 5-HT and 5-methoxydimethyltryptamine was attenuated in animals 14 days after the lesions. The diminution of the effect of 5-HT and 5-methoxydimethyltryptamine was temporally correlated with regeneration of 5-HT containing fibers and terminals in the facial nucleus. The functional importance of the 5-HT input to the facial nucleus and possible presynaptic and postsynaptic mechanisms involved in the development of supersensitivity to 5-HT are discussed. 31 references. (Author abstract modified)

001365 McCulloch, James; Savaki, Helen E.; Sokoloff, Louis. Wellcome Surgical Institute, University of Glasgow, Glasgow, Scotland **Influence of dopaminergic systems on the lateral habenular nucleus of the rat.** Brain Research. 194(1):117-124, 1980.

The autoradiographic 2-deoxyglucose technique was used to study alterations in glucose utilization in the lateral habenular nucleus of male Sprague-Dawley rats treated with a dopaminergic agonist or antagonist. Apomorphine (0.15 to 5mg/kg i.v.) produced significant dose-dependent reductions in glucose utilization in the lateral habenula, but haloperidol (0.01 to 10mg/kg i.v.) increased glucose utilization. Pretreatment with haloperidol (0.1mg/kg) blocked the effects of apomorphine on metabolic activity in the lateral habenula. 20 references. (Author abstract modified)

001366 McDougal, James N.; Marques, Paul R.; Burks, Thomas F. Dept. of Pharmacology, University of Arizona Health Sciences Center, College of Medicine, Tucson, AZ 85724 **Age-related changes in body temperature responses to morphine in rats.** Life Sciences. 27(25&26):2679-2685, 1980.

Body temperature responses to morphine were studied in rats of three age groups: young (3 to 5 months old), mature (10 to 12 months old), and senescent (26 to 28 months old). A low dose of morphine produced hyperthermia in all three age groups, but the senescent rats displayed the greatest increase in body temperature. In contrast, the senescent rats displayed the least hypothermic response to a high dose of morphine. The age related differences in response to morphine were specific since all age groups responded similarly to ethanol. In response to thermic stress, senescent rats developed exaggerated hyperthermia during heat stress and hypothermia during cold stress, indicating no peripheral impairment of ability to conserve or dissipate heat. Age related differences in response to morphine appear to result from alterations in central thermoregulatory mechanisms. 18 references. (Author abstract)

001367 McGinty, Jacqueline F.; Ford, Donald H. Salk Institute, P.O. Box 85800, San Diego, CA 92138 **Effects of prenatal methadone on rat brain catecholamines.** Developmental Neuroscience. 3(4-6):224-234, 1980.

The effects of prenatal methadone on rat brain catecholamines were investigated. Methadone, injected s.c. into Wistar rats during the last trimester of gestation, significantly retarded offspring body and brain growth and the ontogeny of brain catecholamines. On postnatal days 1 and 20, the endogenous content and high affinity uptake of norepinephrine and dopamine were significantly lower in the forebrains of methadone-treated pups than in those of saline or pair fed control offspring. On day 40, regional norepinephrine levels and uptake were similar in the brains of all three groups. However, the striata of methadone pups remained significantly lower in dopamine content and uptake than did those of saline pups at this age. Hindbrain norepinephrine and dopamine were not altered at any time point. These data indicate that prenatal exposure to methadone more severely retarded body and brain growth than did prenatal undernutrition alone. Furthermore, biochemical indices of the maturation of central catecholamine pathways suggest that prenatal methadone may retard catecholaminergic axonal growth from the hindbrain to the forebrain in rats. 22 references. (Author abstract modified)

001368 Meibach, Richard C.; Maayani, Saul. Dept. of Pharmacology, Mount Sinai School of Medicine, CUNY, One Gustave L. Levy Place, New York, NY 10029 **Localization of naloxone-sensitive (3H)dihydromorphine binding sites within the hippocampus of the rat.** European Journal of Pharmacology. 68(2):175-179, 1980.

In vitro radioautographic experiments were performed on coronal brain slices from female Sprague-Dawley rats to localize 3H-dihydromorphine binding sites sensitive to naloxone within the hippocampus. Binding was observed in all cell fields and in the dentate gyrus. Within each cell field, the density of binding was greatest in the striatum pyramidale. The existence of a dense population of opiate binding sites within the hippocampus is consistent with the idea of limbic involvement in opiate abuse. 28 references. (Author abstract modified)

001369 Meibach, Richard C.; Maayani, Saul; Green, Jack P. Green: Dept. of Pharmacology, Mount Sinai School of Medicine, CUNY, One Gustave L. Levy Place, New York, NY 10029 **Characterization and radioautography of (3H)LSD binding by rat brain slices in vitro: the effect of 5-hydroxytryptamine.** European Journal of Pharmacology. 67(4):371-382, 1980.

The binding of tritiated D-lysergic acid diethylamide (3H-LSD) to male Sprague-Dawley rat coronal brain slices and its blockade by 5-hydroxytryptamine (5-HT) was similar to that in brain homogenates in respect to dissociation constants, kinetics, and reversibility. A radioautographic study of slices incubated in 6nM (3H)LSD revealed dense labeling in the choroid plexus and parts of the hippocampal formation. All layers of the cortex, except the posterior cingulate gyrus, were labeled by LSD. In slices incubated with 3H-LSD and 5-HT, 5-HT blocked labeling of choroid plexus, hippocampal formation, septum, pons, medulla, and parts of cortex and reduced labeling in most other structures. 67 references. (Author abstract modified)

001370 Mens, Wim B. J.; Bouman, Henk J.; Bakker, Els A. D.; Van Wimersma Greidanus, Tjeerd B. Rudolf Magnus Institute for Pharmacology, University of Utrecht, Vondellaan 6, 3521 GD Utrecht, The Netherlands **Differential effects of various stimuli on AVP levels in blood and cerebrospinal fluid.** European Journal of Pharmacology. 68(1):89-92, 1980.

Plasma levels of vasopressin in male Wistar rats were markedly increased by water deprivation, by addition of 2% sodium chloride to the drinking water, and by systemic injection of histamine or nicotine. However, none of these stimuli altered vasopressin levels in cerebrospinal fluid (CSF). Results suggest that blood and CSF levels of vasopressin are controlled by different mechanisms. 11 references. (Author abstract modified)

001371 Mesdjian, Edouard; Valli, Marc; Bruguerolle, Bernard; Jadot, Guy; Bouyard, Pierre; Mandel, Paul. Lab. de Pharmacologie Medicale, UER de Medecine, 27, bd Jean Moulin, F-13385 Marseille Cedex 4, France **Phenobarbitone and sodium valproate interaction: an experimental study.** Progress in Neuro-Psychopharmacology. 4(3):247-252, 1980.

Levels of phenobarbitone and valproate were investigated in rabbits receiving either one of these drugs or both of them. A temporary increase of phenobarbitone levels in animals receiving both drugs was observed in rabbits and humans. Similarly, temporary lower levels of valproate were observed when both drugs were administered. Significant correlation was observed between changes in plasma level and alterations in urinary excretion of valproate and phenobarbitone during administration of both drugs. 13 references. (Author abstract modified)

001372 Meyer, Dieter K. Laboratory of Clinical Science, NIMH, Building 10. Bethesda, MD 20205 **Studies on the effect of alpha-melanocyte stimulating hormone and related peptides on the accumulation of p-aminohippuric acid in renal cortical slices. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 9 p.

A possible intrarenal site for the action of alpha-melanocyte stimulating hormone (alpha-MSH) was investigated by testing its effect on the accumulation of p-aminohippuric acid (PAH) by rat kidney cortical slices. When alpha-MSH did not affect the accumulation of PAH, some alpha-MSH-like peptides were tested to rule out the possiblity that such a peptide is responsible for the activity of the parent compound. Also, vasopressin was used in these experiments in an effort to enhance or unmask the action of alpha-MSH. It was concluded that alpha-MSH is not identical to the natriuretic agent present in serum of uremic rats and that it may cause an increase in natriuresis by exerting extrarenal effects. 12 references. (Author abstract modified)

001373 Mimaki, Takashi; Deshmukh, Pushpa, P.; Yamamura, Henry I. Yamamura: Dept. of Pharmacology, University of Arizona, Health Sciences Center, Tucson, AZ 85724 **Decreased benzodiazepine receptor density in rat cerebellum following neurotoxic doses of phenytoin.** Journal of Neurochemistry. 35(6):1473-1475, 1980.

The effect of acute and chronic administration of phenytoin on (3H)flunitrazepam binding was examined in the rat cerebellum. There was no significant effect of phenytoin on (3H)flunitrazepam binding in the rat cerebellum 1 hr and 6 hr after a single i.p. injection of 200mg/kg of phenytoin. However, after 14 days and 28 days of chronic phenytoin administration, significant decreases in (3H)flunitrazepam receptor density were observed, with no changes in apparent affinity constants in the rat cerebellum. This effect of phenytoin was dose dependent, as lower doses of phenytoin for 14 or 28 days produced no alternations in (3H)flunitrazepam binding in the rat cerebellum. Light microscopic examination of the rat cerebellum treated with 200mg/kg/day of phenytoin for 14 days showed degeneration of the Purkinje cells, with edematous Bergmann astrocytes. These data provide evidence for the neuronal localization of benzodiazepine receptors on cerebellar Purkinje cells. 13 references. (Author abstract modified)

001374 Misgeld, U.; Weiler, M. H.; Bak, I. J. Dept. of Neurobiology, Max-Planck-Institut fur Hirnforschung, Deutschordenstrasse 46, D-6000 Frankfurt/M 71, West Germany **Intrinsic cholinergic excitation in the rat neostriatum: nicotinic and muscarinic receptors.** Experimental Brain Research. 39(4):401-409, 1980.

In Wistar rat neostriatal slices studied in vitro, synaptic potentials were suppressed by antinicotinic agents (mecamylamine, d-tubocurarine, and hexamethonium), but not by an antimuscarinic agent (atropine). Exposure to an acetylcholinesterase (AChE) inhibitor (paraoxon or physostigmine) potentiated the synaptic potentials and increased the amplitude of the orthodromic population spike, which was further facilitated when stimulus frequencies were raised from 1 to 3Hz to 10 to 30Hz. Frequency facilitation following exposure to an AChE inhibitor was blocked by atropine. Intracellular recording showed that a slow depolarizing potential caused the frequency potentiation of the orthodromic discharges. 30 references. (Author abstract modified)

001375 Misra, Anand L.; Pontani, Ronald B.; Bartolomeo, Joan G. New York State Division of Substance Abuse Services, Research Lab., 80 Hanson Place, Brooklyn, NY 11217 **Disposition of (3H) phencyclidine in the rat after single and multiple doses.** Life Sciences. 27(25&26):2501-2508, 1980.

The disposition of (3H)phencyclidine (PCP) in the rat after single and multiple doses was investigated. After a 2.5mg/kg i.v. bolus injection of (3H)PCP to male Wistar rats, the half-lives (alpha and beta phases) in plasma were 0.25 and 2.0 hr respectively. The brain to plasma and adipose tissue to plasma concentration ratios of PCP ranged between 7:15 and 31:100 respectively. Oxidative hydroxylation in all three rings, conjugation, N-dealkylation, N-oxidation, dihydroxylation were the metabolic pathways of PCP. PCP and metabolites persisted for prolonged period in adipose tissue and brain. On multiple dosing of PCP, brain, and plasma levels were significantly lower in chronic as compared to the acute group. Concurrently higher values of metabolites and higher ratios of total metabolites to free drug concentrations in plasma occurred in chronic as compared to the acute group. Data suggest that chronic treatment of rats with PCP enhances its metabolism by induction of hepatic microsomal enzymes. 33 references. (Author abstract modified)

001376 Mitchell, Rory. Dept. of Pharmacology, Medical School, Birmingham B15 2TJ, England **A novel GABA receptor modulates stimulus-induced glutamate release from cortico-striatal terminals.** European Journal of Pharmacology. 67(1):119-122, 1980.

Studies of stimulus-induced release of glutamate from corticostriatal terminals indicated that release is actively modulated by a presynaptic GABA receptor. The potencies of GABA agonists at this receptor site differ from those predicted on the basis of electrophysiological, behavioral, and receptor binding experiments. Selective responses to 3-aminopropane sulfonic acid and isoguvacine suggest that this receptor may be associated with the low affinity (3H)GABA binding site. 10 references. (Author abstract modified)

001377 Mitchell, Rory. Dept. of Pharmacology, Medical School, Birmingham, England **Benzodiazepines modify the agonist responses at a presynaptic GABA receptor.** European Journal of Pharmacology. 68(3):369-372, 1980.

The stimulus-induced release of tritiated glutamic acid from prisms of striatal tissue was actively modulated by a presynaptic GABA receptor. The agonist responses of this GABA receptor were modified stereoselectively by benzodiazepines at low concentrations. Results are consistent with data from 3H-GABA binding studies and support the proposed role of GABA recep-

tor modification in the action of benzodiazepines. 9 references. (Author abstract modified)

001378 Mitchell, Rory; Martin, Ian. Dept. of Pharmacology, Medical School, Birmingham B15 2TJ, England **Ethyl beta-carboline-3-carboxylate antagonises the effect of diazepam on a functional GABA receptor.** European Journal of Pharmacology. 68(4):513-514, 1980.

The effects of ethyl-beta-carboline-3-carboxylate (betaCEE), diazepam, and muscimol on the release of labeled glutamate (3H-GLU) from striatal prisms were examined. Muscimol facilitated the potassium-induced release of 3H-GLU from striatal tissue, and this effect was augmented by diazepam. At concentrations up to 200nM, betaCEE had no effect on basal 3H-GLU efflux, potassium evoked GLU release, or facilitation of stimulus-induced release by muscimol. However, a low concentration of betaCEE reduced stimulus-induced release in the presence of muscimol and diazepam, suggesting the carboline antagonized activity at the benzodiazepine recognition site. 5 references.

001379 Miyagawa, Toshiji; Sakurada, Shinobu; Shima, Keisetu; Ando, Ryuichiro; Takahashi, Norio; Kisara, Kensuke. Dept. of Chemical Pharmacology, Tohoku College of Pharmacy, Sendai 983, Japan **Effects of morphine on evoked potentials recorded from the amygdala by tooth pulp stimulation in cats.** Japanese Journal of Pharmacology. 30(4):463-469, 1980.

The effects of i.v. morphine on amygdaloid potentials elicited by tooth pulp stimulation were examined in cats. Morphine significantly decreased evoked potentials in four regions recorded in the amygdaloideus centralis (pars lateralis), nucleus amygdaloideus basalis (pars magnocellularis and pars parvocellularis), and nucleus amygdaloideus lateralis. Morphine had no effect on latency. Naloxone antagonized the depressant effect of morphine. Results suggest there is a receptive field for pain in the amygdala that plays an important role in emotion. 20 references. (Author abstract modified)

001380 Miyaoka, M.; Shinohara, M.; Kennedy, C.; Sokoloff, L. Laboratory of Cerebral Metabolism, NIMH, Bldg. 36, 1A-17, Bethesda, MD 20205 **Local cerebral glucose utilization (LCGU) in rat brain during hypoxemia. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

The quantitative (14C)deoxyglucose autoradiographic method was used in conscious rats spontaneously breathing either 10% or 7% oxygen: the hypoxic environment resulted in mild hypocapnea, slight hypotension, reduced motor activity, and sluggish reflexes. The animals remained conscious and displayed no seizure activity. Values for local cerebral glucose utilization (LCGU) in cortex, thalamus, and colliculi were 20% to 40% below those in control animals; values in the suprachiasmatic nucleus, medial nucleus of the thalamus, dorsal raphe, nucleus commissuralis, nucleus tractus solitarius, and dorsal motor nucleus of the vagus were 20% to 70% higher. Throughout, white matter LCGU was 30% to 90% above control values except in cerebellar white matter where it was unchanged. The autoradiographs, however, contained an abundance of information that could not be practically transformed into quantitative data. Hypoxemia caused peculiar patterns of heterogeneity within many of the anatomical structures. Fine perpendicular columns were present in the cortex, hippocampus, and superior colliculus and lace-like appearance was evident in the caudate nucleus. Weighted averages for glucose utilization for the entire brain were the same for experimental and control animals. This study demonstrates that mild or moderate hypoxemia, sufficient to produce behavioral changes, can cause a marked redistribution of local rates of energy metabolism within the brain without changing the average rate in the brain as a whole. (Author abstract modified)

001381 Mohler, H.; Battersby, M. K.; Richards, J. G.; Polc, P.; Cumin, R.; Pieri, L.; Kettler, R. Pharmaceutical Research Dept., F. Hoffmann-La Roche, Basle, Switzerland **Benzodiazepine receptor: localization by photoaffinity labeling and isolation of a possible endogenous ligand.** Advances in Biochemical Psychopharmacology. 21:295-299, 1980.

Photoaffinity labeling studies of the benzodiazepine receptor (using flunitrazepam as photoaffinity labeling), which provide evidence that nicotinamide is a brain constituent which exerts benzodiazepine-like actions, are described. Autoradiographic localization of the photolabeled benzodiazepine receptor in rat cerebral cortex slices showed a selective association of silver grains with synaptic contact regions, which comprise nerve terminals and adjacent postsynaptic and dendritic structures. When nicotinamide was applied in situ by pressure ejection from a cannula for electrophysiological experiments in cat spinal cord, nicotinamide was found to enhance GABAergic presynaptic inhibition with a potency corresponding to that of a pharmacologically very potent benzodiazepine. It is noted that the hypothesis that nicotinamide exerts benzodiazepine-like actions in brain may shed new light on the mental disorders accompanying nicotinamide deficiency states. 10 references.

001382 Moises, Hylan C.; Hoffer, Barry J.; Woodward, Donald J. Dept. of Cell Biology, University of Texas Health Science Center, 5323 Harry Hines Blvd., Dallas, TX 75235 **GABA facilitation by noradrenaline showed supersensitivity in cerebellum after 6-hydroxydopamine.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(1):37-46, 1980.

After the destruction of noradrenaline (NA) containing afferents and terminals by 6-hydroxydopamine (6-OHDA), Sprague-Dawley rat Purkinje cells showed an increased sensitivity to the facilitating effect of NA or GABA inhibitory action. However, the duration of the interaction of NA and GABA was reduced in animals treated with 6-OHDA compared to controls, and a conspicuous loss of the GABA response was often observed after the NA application was terminated. The emergence of this modulatory supersensitivy in cerebellum after the loss of noradrenergic system may appear as a lack of regulation of the GABA inhibitory system. 27 references. (Author abstract modified)

001383 Moody, Terry W.; Taylor, Duncan P.; Pert, Candace B. Bldg. 10, Room 2N315, NIH, Bethesda, MD 20205 **Effects of guanine nucleotides on CNS neuropeptide receptors. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 15 p.

The effects of guanine-5'-imidotriphosphate (GMP-P(NH)P) and other nucleotides on radiolabeled (Tyr4) bombesin and vasoactive intestinal polypeptide (VIP) binding to CNS neuropeptide receptors were investigated. The observed negative modulatory effects of GMP-P(NH)P on VIP binding were compared to those previously obtained for other receptors coupled to adenylate cyclase. The guanine nucleotides guanosine-5'-triphosphate (GTP) and GMP-P(NH)P significantly inhibited the binding of radiolabeled VIP but not that of (Tyr4)bombesin to rat brain membranes. The VIP binding was inhibited by guanine nucleotides in a dose dependent manner. Using a 20mcM dose, 60% of the specific VIP binding was inhibited by GMP-P(NH)P, which was more potent than GTP, whereas other nucleotides were not effective. This reduction in binding was a consequence of lower affinity of the receptor for VIP, which in turn resulted from an increased rate of dissociation. 26 references. (Author abstract modified)

001384 Morgan, M. E.; Gibb, J. W. Dept. of Biochemical Pharmacology and Toxicology, University of Utah, Salt Lake City, UT 84112 **Short-term and long-term effects of methamphetamine on biogenic amine metabolism in extra-striatal dopaminergic nuclei.** Neuropharmacology. 19(10):989-995, 1980.

The effects of multiple toxic doses of methamphetamine on catecholaminergic, serotonergic and cholinergic metabolism in the neostriatum, nucleus accumbens, olfactory tubercle and median eminence area of the rat brain have been investigated. Thirty-six hours after the first of 5 doses, tyrosine hydroxylase (TH) activity, as well as dopamine and norepinephrine levels, were significantly decreased in the neostriatum and olfactory tubercle but were not altered in the nucleus accumbens or median eminence area. Prior to the 36 hr time point, drug treatment significantly decreased TH activity in the neostriatum and olfactory tubercle, but did not change the enzyme activity in the nucleus accumbens. Neostriatal TH activity in the neostriatum and olfactory tubercle was significantly decreased up to 30 days after methamphetamine. The evidence suggests that the serotonergic neurons are more sensitive to the toxic effects of methamphetamine than the dopaminergic neurons, whereas, the cholinergic neurons seem to be essentially unaffected. 35 references. (Author abstract modified)

001385 Morley, J. E.; Raleigh, M. J.; Brammer, G. L.; Yuwiler, A.; Geller, E.; Flannery, J.; Hershman, J. M. Neuroendocrine Research Laboratory, Minneapolis Veterans Administration Center, Minneapolis, MN 55417 **Serotonergic and catecholaminergic influence on thyroid function in the vervet monkey.** European Journal of Pharmacology. 67(2/3):283-288, 1980.

The role of serotonin (5-HT) in the regulation of the hypothalamus/pituitary/thyroid axis was studied in male vervet monkeys. Acute administration of L-trytophan did not alter basal levels of thyroid hormones, but decreased the thyrotropin releasing hormone (TRH)-induced thyroid-stimulating-hormone (TSH) response. Repeated dose loading of tryptophan or 5-hydroxytryptophan increased blood 5-HT and plasma triiodothyronine (T3) and decreased plasma TSH. The tryptophan hydroxylase inhibitor p-chlorophenylalanine decreased blood 5-HT, but did not alter plasma TSH, T3, or levothyroxine (T4). Chlorgyline also decreased blood 5-HT, but increased plasma TSH and T4 and decreased T3. Results are consistent with central catecholaminergic, rather than serotonergic, control of TRH release. Tryptophan and 5-hydroxytryptophan may act by increasing 5-HT levels in the thyroid gland, producing an increase in T3 with a compensatory decrease in TSH via negative feedback. 21 references. (Author abstract modified)

001386 Moroni, F.; Casamenti, F.; Caliari, S.; Pisani, G.; Moneti, G.; Pepeu, G. Dept. of Pharmacology, University of Florence, I-50134 Florence, Italy **Acetylcholine and amino acid neurotransmitters in epidural cups of freely moving rats: effect of acute and chronic treatment with antischizophrenic drugs.** Advances in Biochemical Psychopharmacology. 24:245-252, 1980.

The effect of acute and chronic treatment with antischizophrenic drugs on acetylcholine (ACh) and amino acid neurotransmitters in epidural cups of freely-moving rats was investigated. Functional activity of the cortical cholinergic and GABAergic neurons were monitored by measuring ACh and GABA output from the cerebral cortex in freely-moving rats. To evaluate the effectiveness of chronic treatment and the development of tolerance, behavioral effects of amphetamine and its stimulatory action on cortical ACh output were investigated in rats chronically treated with haloperidol, pimozide, and fluspirilene. These drugs caused sedation and decreased exploratory behavior, but did not depress ACh output. Pimozide and haloperidol did not affect GABA levels in the epidural cups. 23 references.

001387 Mucha, R. F.; Kalant, H. Kalant: Addiction Research Foundation, 33 Russell St., Toronto, Ontario, Canada M5S 2S1 **Log dose/response curve flattening in rats after daily injection of opiates.** Psychopharmacology. 71(1):51-61, 1980.

Log dose/response curve flattening in rats after daily injection of opiates is described. Rats injected daily with 0, 20, and 200mg/kg morphine sulphate for 25 to 49 days experienced log dose/response (LDR) curve flattening (decrease in slope and/or maximum response) for analgesia (tail immersion test) produced by etorphine HCl injected i.p. or intracerebroventricularly (ICV), and for latency to maximum rectal temperature increase produced by i.p. etorphine. Rats treated similarly with 0, 50, and 500mg/kg etorphine HCl for 32 days exhibited LDR curve flattening for analgesia produced by etorphine and morphine (IP). In addition, a profound bodyweight loss produced by high dose morphine treatment was found not to be involved in flattening, since similar bodyweight decreases produced by food restriction in 0 and 20 mg/kg rats did not have this effect. Flattening, however, may be due to a rapidly-acquired and rapidly-lost within-session (acute) tolerance. Further data support the notion that chronic tolerance reflects an enhancement or prolongation of acute tolerance. 39 references. (Author abstract modified)

001388 Mudd, S. Harvey. Laboratory of General and Comparative Biochemistry, NIMH, Bethesda, MD 20205 **Vitamin-responsive genetic abnormalities. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 66 p.

General properties which characterize vitamin responsive conditions, the mechanism or mechanisms underlying vitamin responsiveness, and the implications of the present understanding of these matters both for those concerned with individual patients with metabolic diseases and for those concerned with more general aspects of human nutrition are discussed. An historical perspective is given, and genetic abnormalities currently known to be vitamin responsive are reviewed. Mechanisms underlying vitamin responsiveness include: 1) defects in the processing of a vitamin prior to its interaction in cofactor form with a particular apoenzyme (abnormalities of intrinsic factor, ileal abnormalities leading to abnormal uptake, abnormalities of transcobalamin II, intracellular processing of cobalamin, possible toxic effects of vitamins, and processing errors for other vitamins); 2) defects in particular apoenzymes which interact with the cofactor forms of vitamins (cystathionine beta-synthase deficiency, other abnormalities); and 3) vitamin responsive genetic diseases in which the effect of the vitamin is upon a metabolic step or process other than the primary abnormality in the disease. The significance of vitamin responsive genetic conditions is discussed. 145 references.

001389 Mueller, R. A.; Lundberg, D.; Breese, G. Dept. of Anesthesiology, University of North Carolina, Chapel Hill, NC 27514 **Effects of different monoamine oxidase inhibitors on respiratory activity in rats with chronically impaired central serotonergic function.** Acta Pharmacologica et Toxicologica. 47(4):285-293, 1980.

Resting and carbon dioxide stimulated respiratory frequency (RF) and minute volume (Vm) were significantly lower in male Sprague-Dawley rats pretreated neonatally with intracisternal 5,7-dihydroxytryptamine (5,7-DHT) than in naive rats. In the 5,7-DHT treated rats, clorgyline and pargyline further reduced resting and stimulated RF and Vm, while l-deprenyl stimulated respiration; the monoamine oxidase inhibitors had no significant effect on RF and Vm in naive rats. Results indicate that activation of a serotonergic neuronal system depresses respiration, whereas dopaminergic activation stimulates respiration. 20 references. (Author abstract modified)

001390 Mulder, Arie H.; Stoof, Johannes C.; Horn, Alan S. Dept. of Pharmacology, Free University Medical Faculty, Van der Boechorststraat 7, 1081 BT Amsterdam, The Netherlands **Activation of presynaptic alpha-noradrenaline receptors in rat brain by the potent dopamine-mimetic N,N-dipropyl-5,6-ADTN.** European Journal of Pharmacology. 67(1):147-150, 1980.

The potassium evoked release of 3H-noradrenaline (3H-NA) from preloaded male Wistar rat cerebral cortex slices was not affected by dopamine (1mcM), but was inhibited by the 2-aminotetralins, 2-amino-5,6-dihydroxytetralin (5,6-ADTN) and N,N-dipropyl-5,6-ADTN by about 27 and 65%, respectively. The inhibitory effect of N,N-dipropyl-5,6-ADTN was concentration dependent and was antagonized by phentolamine (but not by fluphenazine). Results indicate that N,N-dipropyl-5,6-ADTN stimulates presynaptic alpha-adrenergic receptors. 11 references. (Author abstract modified)

001391 Muller, E. E.; Fregnan, G. B.; Chieli, T.; Cocchi, D.; Frigerio, C.; Locatelli, V. Institute of Pharmacology and Pharmacognosy, University of Cagliari, Cagliari, Italy **Effects of neuroleptics on neuroendocrine mechanisms for gonadotropin secretion.** Advances in Biochemical Psychopharmacology. 24:387-397, 1980.

The effects of neuroleptics (haloperidol or domperidone) on neuroendocrine mechanisms (i.e., hypothalamic luteinizing hormone releasing hormone) for gonadotropin secretion were investigated. The major effect of the two drugs studied was an increase in the pool of gonadotropins available for release in the female rat. To explain this result, an increased function of the luteinizing hormone releasing hormone (LHRH) system may be postulated in the rats treated with haloperidol. This mechanism cannot be invoked for the animals treated with domperiodone, standing the increased LHRH stores in the hypothalamus, likely reflecting decreased LHRH release. The increased stores of pituitary gonadotropins did not result in corresponding rises in plasma gonadotropins however, which may be due to the drugs' ability to block the LHRH releasing stimulus at the pituitary level. 25 references.

001392 Muller, Pavel; Svensson, Torgny H.; Carlsson, Arvid. Dept. of Pharmacology, University of Goteborg, Goteborg, Fack, S-400 33 Goteborg 33, Sweden **Pre- and postsynaptic mechanisms in haloperidol-induced sensitization to dopaminergic agonists.** Advances in Biochemical Psychopharmacology. 24:69-74, 1980.

Presynaptic and postsynaptic mechanisms in haloperidol-induced sensitization to dopaminergic (DA) agonists were investigated. Both electrophysiological and behavioral data suggest that the relay part of the behavioral sensitization to DA agonists like apomorphine following haloperidol treatment might be particularly related to autoreceptor blockade by residual drug. A model of the various factors influencing the response to the DA agonist in the behaviorally supersensitive rodent following neuroleptic pretreatment is presented. It is hypothesized that blockade of autoreceptors could be involved in mediation of acute dyskinesia, since the time course of development appears to be comparable. 24 references.

001393 Muraki, T.; Tokunaga, Y.; Nakadate, T.; Kato, R. Dept. of Pharmacology, School of Medicine, Keio University, Shinanomachi, Shinjuku-ku, Tokyo 160, Japan **Suppressive effect of morphine on serum gonadotropin levels in castrated rats.** Archives Internationales de Pharmacodynamie et de Therapie. 246(2):324-334, 1980.

A single injection of morphine reduced serum luteinizing hormone (LH) and follicle stimulating hormone (FSH) levels in castrated Wistar rats. The morphine-induced decrease in serum LH was greater than that in serum FSH, and naloxone reversed the effect of morphine on LH but not on FSH. Morphine slightly potentiated the increase in serum LH induced by exogenous luteinizing hormone releasing hormone (LHRH) in intact and castrated rats, but did not alter the increase in serum FSH induced by LHRH in intact males. Results indicate that the morphine-induced decrease in serum gonadotropin levels was not due to inhibition of the stimulatory effect of LHRH on the pituitary gland. 15 references. (Author abstract modified)

001394 Nakata, Yoshihiro; Kusaka, Yoshiko; Yajima, Haruaki; Kitagawa, Kouki; Segawa, Tomio. Segawa: Institute of Pharmaceutical Sciences, Hiroshima University School of Medicine, Kasumi 1-2-3, Minami-ku, Hiroshima 734, Japan **Further characterization of the binding of substance P to a fraction from rabbit brain enriched in synaptic membranes.** Nauyn-Schmiedeberg's Archives of Pharmacology. 314(3):211-214, 1980.

The effects of enzymes, detergents, and ions on the specific binding of tritiated substance-P (3H-SP) to membrane fractions from rabbit brain were determined. Proteolytic enzymes had no effect on specific 3H-SP binding, but phospholipase-A, phospholipase-C, and phospholipase-D reduced specific binding without decreasing total binding. Neuraminidase and deoxycholate decreased total binding as well as specific binding. High concentrations of Triton-X-100 reduced specific binding. Sodium ions caused a concentration dependent reduction in specific binding, but potassium ions had only slight effects at physiological concentrations. Binding was reduced considerably by 100 mmol/l calcium chloride. Results suggest that the specific 3H-SP binding sites in membrane fractions from rabbit brain may be phospholipids. 12 references. (Author abstract modified)

001395 Nielsen, M.; Nielsen, E. B.; Ellison, G.; Braestrup, C. St. Hans Mental Hospital, Dept. E., Roskilde, Denmark **Modification of dopamine receptors in brain by continuous amphetamine administrations to rats.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 110-113).

Changes in brain receptors for neurotransmitters following continuous exposure of rats to d-amphetamine were investigated using high affinity binding techniques. Since amphetamine releases dopamine from dopamine nerve terminals in the corpus striatum the findings indicate that increased release of dopamine in striatum reduces the level of dopamine receptors. The reduced levels of spiroperidol and LSD binding in frontal cortex after amphetamine were probably due to reduced levels of serotonin receptors, although a dopaminergic component cannot be excluded. 16 references.

001396 Nomura, Y.; Schmidt-Glenewinkel, T.; Giacobini, E. Dept. of Pharmacology, Institute of Pharmaceutical Sciences, Hiroshima University School of Medicine, Kasumi 1-2-3, Hiroshima, Japan **Uptake of piperidine and pipecolic acid by synaptosomes from mouse brain.** Neurochemical Research. 5(11):1163-1173, 1980.

The uptake of piperidine and pipecolic acid into the synaptosomal fraction of C57/BL6 and C57/BL10 mouse brain was studied. Transport of piperidine was independent of sodium, was temperature dependent, was sensitive to ouabain, and was found to be a low affinity transport system. Uptake of pipecolic acid was temperature and sodium dependent and sensitive to ouabain; pipecolic acid was transported by both low and high affinity systems. Compounds structurally related to pipecolic acid such as glycine, L-proline, 4-amino-n-butyric acid, and 5-amino-n-valeric acid had an inhibitory effect on pipecolic acid uptake. Results suggest pipecolic acid may have a physiological role in the CNS. 37 references. (Author abstract modified)

001397 Nowak, Jerzy Z. Dept. of Biogenic Amines, Institute of Pharmacology, Polish Academy of Sciences, 60 Narutowicza St., 90-136 Lodz, Poland **Interaction of histamine H2-receptor blocking drugs with the noradrenergic system in rat brain and heart.** European Journal of Pharmacology. 68(1):69-72, 1980.

Intraventricular injection of 50mcg burimamide (BUR) or 250mcg cimetidine (CIM) decreased hypothalamic noradrenaline (NA) by 32 and 21% and increased whole brain 3-methoxy-4-hydroxyphenylglycol by 46 and 28%, respectively. The i.p. administration of 50mg/kg BUR or metiamide caused a decrease in rat heart NA by 34 and 21% respectively. CIM had no effect on heart NA at doses up to 100mg/kg i.p. 10 references. (Author abstract modified)

001398 O'Donohue, T. L.; Handelmann, G. E.; Loh, Y. P.; Olton, D. S.; Liebowitz, J.; Jacobowitz, D. M. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Comparison of biological and behavioral activities of alpha- and gamma-melanocyte stimulating hormones. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 11 p.

Biological and behavioral activities of gamma-melanocyte stimulating hormones (gamma-MSH) and alpha-MSH were compared using three different tests: 1) darkening of the skin of Anolis; 2) grooming behavior of rats; and 3) performance of a visual discrimination task by rats. When incubated with the Anolis skin, both peptides cause skin darkening. However, alpha-MSH is much more potent than gamma-MSH. The alpha-MSH effect is not antagonized by coincubation with gamma-MSH. When given intraventricularly to rats, alpha-MSH induces a marked grooming behavior. This effect was not noted upon administration of gamma-MSH. Injection of gamma-MSH with the alpha-MSH did not produce a grooming response significantly different from alpha-MSH alone. In the visual discrimination task, the two peptides had opposite effects on the rate at which rats learned the initial discrimination and a subsequent reversal. The peptides were injected intraperitoneally prior to behavioral testing. Following alpha-MSH, rats learned the discrimination and subsequent reversal faster than control rats. Following gamma-MSH, rats learned the initial discrimination at approximately the same rates as controls, and learned the reversals at a much slower rate. These results are discussed in terms of the similarity and differences in the mechanisms of action of alpha-MSH and gamma-MSH. 18 references. (Author abstract)

001399 Oakley, N. R.; Jones, B. J. Pharmacology Dept., Glaxo Group Research Ltd., Greenford Road, Greenford, Middlesex UB6 OHE, England **The proconvulsant and diazepam-reversing effects of ethyl-beta-carboline-3-carboxylate.** European Journal of Pharmacology. 68(3):381-382, 1980.

Ethyl-beta-carboline-3-carboxylate (BCCE) showed a high affinity for benzodiazepine receptors in rat cortical membranes in vitro, but had selective convulsant properties in male CD1 mice in vivo. BCCE (25 to 100mg/kg i.p.) potentiated rather than inhibited convulsions induced by leptazol (pentylenetetrazol) and maximal electroshock and had no effect against picrotoxin or caffeine-induced convulsions or footshock-induced fighting. BCCE (100mg/kg i.p.) also reversed the anticonvulsant effects of diazepam against leptazol and reduced diazepam-induced incoordination. 5 references.

001400 Oertel, W. H.; Schmechel, D. E.; Brownstein, M. J.; Ransom, D. H.; Kopin, I. J. Laboratory of Clinical Science, Bldg. 10, Rm. 20-55, NIMH, Bethesda, MD 20205 **Decrease of GAD-immunoreactive nerve terminals in the substantia nigra after kainic acid lesion of the striatum. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 14 p.

Antiserum number 1440 against rat brain glutamate decarboxylase (GAD) was employed for the immunohistochemical localization of GAD-immunoreactive nerve terminals in the substantia nigra (SN). To test whether the antiserum specifically localized GAD containing axon terminals, the effect of kainic acid induced striatal lesions on the reactive nerve endings in the SN was investigated. Seven days after the injection of 1mcg kainic acid into the striatum a 65% decrease in GAD enzyme activity occurred in the ipsilateral SN. On immunohistochemical examination there was correspondingly a marked reduction of GAD-positive terminals. The parallel decrease in biochemical and immunohistochemical GAD activity indicates that antiserum number 1440 can be used as a specific immunohistochemical probe for GAD containing elements. 19 references. (Author abstract)

001401 Okada, Yasuhiro; Ozawa, Seiji. Dept. of Neurochemistry, Tokyo Metropolitan Institute for Neurosciences, 2-6, Musashidai Fuchu-shi, Tokyo 183, Japan **Inhibitory action of adenosine on synaptic transmission in the hippocampus of the guinea pig in vitro.** European Journal of Pharmacology. 68(4):483-492, 1980.

In guinea-pig hippocampal slices, adenosine reversibly inhibited the postsynaptic field potential elicited in the pyramidal cell layer of the CA3 region by mossy fiber stimulation. Intracellular recording studies showed that adenosine and adenine nucleotides hyperpolarized membrane potential and markedly depressed excitatory postsynaptic potentials elicited in the pyramidal cell by granular cell activations; spike generation and membrane conductance were not altered. The inhibitory action of adenosine was counteracted by 4-aminopyridine. Results suggest that adenosine and adenine nucleotides may act as presynaptic inhibitors through a negative feedback action. 37 references. (Author abstract modified)

001402 Okamoto, Koichi; Sakai, Yutaka. Dept. of Pharmacology, National Defense Medical College, Tokorozawa, Saitama, Japan **Localization of sensitive sites to taurine, gamma-aminobutyric acid, glycine and beta-alanine in the molecular layer of guinea-pig cerebellar slices.** British Journal of Pharmacology. 69(3):407-413, 1980.

The localization of sites sensitive to iontophoretically applied taurine, GABA, glycine, and beta-alanine in the moleuclar layer of guinea-pig cerebellar slices was determined. Basket synapses on the Purkinje cell soma appeared to be most sensitive to GABA, while sites for taurine, glycine, and beta-alanine appeared to be synapses of the stellate neurons on the Purkinje cells dendrites. Inhibitory actions of all four amino acids were antagonized by picrotoxin and strychnine. The possibility that taurine may be the neurotransmitter of the stellate neurons in guinea-pig cerebellum is discussed. 12 references. (Author abstract modified)

001403 Onali, Pierluigi; Schwartz, Joan P.; Hanbauer, Ingeborg; Costa, Erminio. Costa: Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Regulation by a beta-adrenergic receptor of a CA-independent adenosine 3'-5'cyclic monophosphate phosphodiesterase in C6 glioma cells. (Unpublished paper).** Washington, DC, NIMH, 1980. 28 p.

The hormonal control of cyclic nucleotide phosphodiesterase (PDE) activity has been studied by using as a model the isoproterenol stimulation of cyclic adenosine 3'-5'monophosphate (AMP) PDE activity in C6 glioma cells. A twofold increase of cyclic AMP PDE specific activity was observed in homogenates of isoproterenol-treated cells relative to control. This increase reached a maximum 3 hours after addition of isoproter-

enol, was selected for cyclic AMP hydrolysis, was reproduced by incubation with 8-bromoadenosine 3'-5'cyclic monophosphate (8-Br cAMP) but not with 8-bromoguanosine 3'-5'cyclic monophosphate (8-Br cGMP), was dependent on new ribonucleic acid and protein synthesis, and was limited to the soluble enzyme activity. The presence of 0.1mM ethylene glycol bis (beta-aminoethyl ether)N,N'tetraacetic acid did not alter the magnitude of the increase in PDE activity. Moreover, the calmodulin content in the cell extracts was not changed after isoproterenol. DEAE chromatography of the 100,000 (x) g supernatant resolved two peaks of PDE activity. The first peak hydrolyzed both cyclic nucleotides and was activated by calcium and purified calmodulin. The second peak was specific for cyclic AMP but it was calcium and calmodulin insensitive. Isoproterenol selectively increased the Vmax of the second peak. Kinetic analysis of the cyclic AMP hydrolysis by the induced enzyme revealed a nonlinear Hofstee plot with apparent Km values of 2 to 5mcM. Cyclic GMP was not hydrolyzed by this enzyme in the absence or presence of calmodulin and failed to affect the kinetics of the hydrolysis of cyclic AMP. Gel filtration chromatography of the induced DEAE peak resolved a single peak of enzyme activity with an apparent molecular weight of 54,000 daltons. 32 references. (Author abstract)

001404 Opmeer, Fred A.; Loeber, J. Gerard; van Ree, Jan M. Rudolf Magnus Institute for Pharmacology, Medical Faculty, University of Utrecht, Vondellaan 6, Utrecht, The Netherlands **Altered levels of beta-endorphin fragments after chronic morphine treatment of guinea-pig ileum in vitro and in vivo.** Life Sciences. 27(24):2393-2400, 1980.

The influence of chronic morphine treatment on the levels of enkephalins, beta-endorphin, and some of its fragments was studied in the isolated myenteric plexus/longitudinal muscle of the guinea-pig ileum (GPI). The peptides were assayed by means of a combination of high pressure liquid chromatography and radioimmunoassays. Levels of methionine enkephalin, leucine enkephalin, and beta-endorphin were not altered by chronic morphine treatment of guinea-pigs in vivo nor in GPI exposed to morphine in vitro. However, the levels of some beta-endorphin fragments were elevated after morphine treatment in vitro and in vivo. It is suggested that beta-endorphin and its fragments are involved in homeostatic processes during development of opiate tolerance. 32 references. (Author abstract modified)

001405 Palmer, G. C.; Legendre, J. L.; Manian, A. A. Dept. of Pharmacology, University of South Alabama, College of Medicine, Mobile, AL 36688 **Di- and trihydroxy analogs of chlorpromazine influence the central activity of adenylate cyclase and cyclic AMP phosphodiesterase.** Archives Internationales de Pharmacodynamie et de Therapie. 247(1):59-70, 1980.

The effects of dihydroxy and trihydroxy analogs of chlorpromazine (CPZ) on adenylate cyclase in broken cell preparations of rat frontal cortex were examined. The inhibition of adenylate cyclase by 7,8-dihydroxy-CPZ was noncompetitive with respect to ATP concentration. Increased calcium ion concentrations obliterated adenylate cyclase activation by dopamine or 5'-guanylylimidodiphosphate alone or in combination. Enzyme inhibition by 7,8-dihydroxy-CPZ was abolished by increased calcium ion concentratons, but not by increased magnesium ion concentrations. Incubation with CPZ, 3,7,8-trihydroxy-CPZ, or 6,9-dihydroxy-CPZ inhibited stimulation of adenylate cyclase activity, but either 3,7-dihydroxy-CPZ and 3,8-dihydroxy-CPZ enhanced enzyme activity. It is suggested that CPZ and its dihydroxy analogs affect cyclic nucleotides by inhibiting the catecholamine receptor site of adenylate cyclase, inhibiting the calcium dependent regulator form of phosphodiesterase, or interacting with critical ions associated with both enzyme activities. 25 references. (Author abstract modified)

001406 Palmer, Michael Rule. University of Colorado at Boulder **The electrophysiological effects of enkephalin and phencyclidine in the rat central nervous system. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1335-B, 1980. Ann Arbor, Univ. Microfilms No. 8021616, 235p., 1980.

Electrophysiological effects of enkephalin were investigated in vivo in defined populations of neurons in rat neocortex and hippocampal pyramidal cells and in vitro in hippocampal slice; and central phencyclidine (PCP) effects were assessed on cerebellar Purkinje neurons. Both methionine-enkephalin (ME) and the D-ala2 analog (2dA) produced potent depressions of spontaneous discharge of cortical neurons and of the activity evoked by acetylcholine or glutamate; these effects were naloxone reversible. 2dA effects in frontal cortex were blocked by parenteral administration of antipsychotic catecholamine antagonists in a stereospecific manner, and unilateral lesioning of catecholaminergic projections in frontal cortex resulted in an ipsilateral decrease in 2dA efficacy and the elimination of antipsychotic antagonistic effects. Results suggest that catecholamines may act as postsynaptic modulators to augment responsiveness to enkephalins. Local administration of PCP elicited a dose-dependent slowing of spontaneous discharge of cerebellar Purkinje cells, as did, to a lesser extent, ketamine; and the effects of both were antagonized by several antipsychotic catecholamine antagonists. Similarities between the electrophysiological and behavioral properties of PCP suggest that alterations in neuronal discharge may underlie its psychotomimetic activity. (Journal abstract modified)

001407 Patel, A. J.; Vertes, Zs.; Lewis, P. D.; Lai, M. Medical Research Council Developmental Neurobiology Unit, Institute of Neurology, 33 John's Mews, London WC1N 2NS, England **Effect of chlorpromazine on cell proliferation in the developing rat brain. A combined biochemical and morphological study.** Brain Research. 202(2):415-428, 1980.

A biochemical and morphological study of the effect of chlorpromazine on cell proliferation in the developing rat brain is described. Chlorpromazine produced a severe reduction of the rate of (3H)thymidine incorporation into brain DNA of 11-day-old rats. The depression of in vivo synthesis rate was detectable by 6 hr after chlorpromazine administration and the rate was less than 40% and 60% of controls during period 14 to 30 hr in forebrain and 6 to 30 hr in cerebellum respectively. The drug caused some retardation in the rate of conversion of (3H)thymidine to (3H)thymine nucleotides in the brain, but the severe depression in DNA labelling was also evident after correcting the values of the basis of (3H)thymine nucleotide concentration. Mitotic activity was significantly reduced in the cerebellar external granular layer. Increased numbers of cell degenerations, shown by Feulgen cytophotometry to be postmitotic, were seen in both layers 12 hr and 32 hr after chlorpromazine. Results are consistent with an action of chlorpromazine on cell proliferation, either by direct effects on the generation and survival of cells, or via its major pharmacological actions on neurotransmitter balance. 39 references. (Author abstract modified)

001408 Pepper, Christine M.; Henderson, Graeme. St. George's Hospital Medical School, London SW17 ORE, England **Opiates and opioid peptides hyperpolarize locus coeruleus neurons in vitro.** Science. 209(4454):394-396, 1980.

The mechanisms underlying the inhibition of neuronal activity by opiates and opioid peptides were examined by recording intracellularly from locus coeruleus neurons in vitro and studying

the actions of these drugs on neuronal membrane properties. In a brain slice preparation of guinea-pig pons, opiates and opioid peptides produced a dose-dependent, stereospecific, naloxone reversible hyperpolarization of the neuronal membrane. This was associated with an increase in membrane conductance. Findings raise the possibility that, in the locus coeruleus, endogenous opioid peptides may mediate direct postsynaptic inhibition. 14 references.

001409 Peraino, Carl; Ehret, Charles F.; Groh, Kenneth R.; Meinert, John C.; D'Arcy-Gomez, Genet. Division of Biological and Medical Research, Argonne National Laboratory, Argonne, IL 60439 **Phenobarbital effects on weight gain and circadian cycling of food intake and body temperature.** Proceedings of the Society for Experimental Biology and Medicine. 165(3):473-479, 1980.

The effects of 0.25% dietary phenobarbital on growth rates and food intake levels in rats were investigated. These rats gained less weight than rats fed the unsupplemented diet. The reduced weight gain accompanied the induction of marked hepatomegaly. Circadian cycling of food in control rats followed a biphasic pattern. In rats on phenobarbital, eating activity was confined to the first feeding episode, with the level of intake during this interval increasing to compensate for the absence of significant subsequent feeding, so that the daily levels of food consumption were similar in both groups. Measurements of circadian cycling of deep body temperature showed that phenobarbital approximately doubled the amplitude of the temperature cycle and advanced the time at which peak temperature was attained by approximately 2 hours. It is suggested that the lower weight gain in rats chronically exposed to phenobarbital results primarily from alterations in hepatic metabolism, but phenobarbital mediated changes in the circadian cycling of food intake and deep body temperature may also contribute to the growth reduction. 20 references. (Author abstract modified)

001410 Perkins, M. N.; Stone, T. W. Stone: Dept. of Physiology, St. George's Hospital Medical School, University of London, London SW17 ORE, England **Aminophylline and theophylline derivatives as antagonists of neuronal depression by adenosine: a microiontophoretic study.** Archives Internationales de Pharmacodynamie et de Therapie. 246(2):205-214, 1980.

Aminophylline, theophylline, etamiphylline, and diprophylline were tested as antagonists of neuronal inhibition produced in male Wistar rat brain by microiontophoretically applied adenosine. Aminophylline was an effective adenosine antagonist when ejected as an anion, especially from alkaline solution. Anionic theophylline was less effective, and ethylenediamine and hydroxyl ions had no effect on adenosine responses. GABA depressions were not affected by the methylxanthines during adenosine blockade. Aminophylline and ethylenediamine depressed firing in some cells when ejected cationically, but no antagonism of adenosine was observed. 30 references. (Author abstract modified)

001411 Pert, Agu. Section on Biochemistry and Pharmacology, Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Psychopharmacology of analgesia and pain. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 64 p.

Centrally acting compounds and drug combinations that have been shown to have antinociceptive actions in laboratory animals are reviewed with special emphasis on mechanisms of action. The organization of the somatosensory system concerned with processing pain information is reviewed, and opiate analgesics are dealt with in detail: direction spinal actions of opiates; supraspinal sites of opiate analgesia; descending inhibitory mechanisms; the role of descending serotonergic pathways in morphine analgesia; noradrenergic descending pathways and morphine analgesia; endogenous opioid pain suppression system; whether naloxone induces hyperalgesia; and endorphins in pathological pain states. Also covered are: 1) serotonergic mechanism in pain modulation and opiate analgesia; 2) the role of catecholamines in pain modulation and opiate analgesia; 3) acetylcholine; 4) amino acid neurotransmitters; 5) benzodiazepines and minor tranquilizers, cannabinol, and phencyclidine; and 6) neuropeptides. 402 references.

001412 Peters, John R.; Grahame-Smith, David G. Dept. of Medicine, University Hospital of Wales, Heath Park, Cardiff, CF4 4XW, Wales **Human platelet 5HT receptors: characterisation and functional association.** European Journal of Pharmacology. 68(3):243-256, 1980.

A study of the kinetics of tritiated 5-hydroxytryptamine (5-HT)binding to intact human platelets demonstrated the presence of two 5-HT receptor sites. The high and low affinity binding sites were associated with 5-HT-induced aggregation and 5-HT uptake, respectively. These high and low affinity aggregation and uptake sites appear to be analogous to central neuronal postsynaptic and presynaptic 5-HT receptors. 26 references. (Author abstract modified)

001413 Petersen, Kurt Pfeiffer. DAK Laboratories, 59 Legravsvej, DK-2300 Copenhagen S, Denmark **Effect of age and route of administration on LD50 of lithium chloride in the rat.** Acta Pharmacologica et Toxicologica. 47(5):351-354, 1980.

The median lethal dose (LD50) of lithium chloride was determined in inbred male Wistar rats at 3 weeks, 6 weeks, 3 months, and 6 months of age. After oral administration, the LD50 was significantly higher in 6-week-old rats than in older rats. No age differences in response were seen after intraperitoneal or subcutaneous administration. The LD50 was significantly higher after oral administration than after injection in 3 and 6-week-old rats but not in the older rats. 12 references. (Author abstract modified)

001414 Phillis, J. W.; Siemens, R. K.; Wu, P. H. Dept. of Physiology, College of Medicine, University of Saskatchewan, Saskatoon, Canada S7N 0W0 **Effects of diazepam on adenosine and acetylcholine release from rat cerebral cortex: further evidence for a purinergic mechanism in action of diazepam.** British Journal of Pharmacology. 70(2):341-348, 1980.

Diazepam (0.25mg/kg i.p.) enhanced the rate of efflux of 3H-adenosine and its metabolites from male Sprague-Dawley and Wistar rat cerebral cortex. Diazepam also depressed acetylcholine (ACh) release from the cortex; this effect was reversed by theophylline, which enhanced ACh release. When diazepam was given after theophylline, the benzodiazepine further enhanced release. Pentobarbitone sodium (5, 10, and 15mg/kg) did not elicit an increase in adenosine release. Results suggest that benzodiazepines may exert their pharmacological actions by preventing adenosine uptake, thus enhancing levels of extracellular adenosine. 33 references. (Author abstract modified)

001415 Phyall, Willa; Chiang, Peter; Cantoni, Giulio L.; Lovenberg, Walter. Lovenberg: Section on Biochemical Pharmacology, NHLBI, NIH, Bethesda, MD 20205 **The hypotensive action of 3-deaza-adenosine.** European Journal of Pharmacology. 67(4):485-488, 1980.

The effect of 3-deaza-adenosine on the cardiovascular system was studied in normotensive Wistar-Kyoto rats and spontaneously hypertensive Okamoto rats. The drug lowered blood pressure in both groups for up to 2 hours. The hypotensive effect was not altered by ganglion blockade and appeared to be due to

a direct action on blood vessels. 8 references. (Author abstract modified)

001416 Pickard, J. D.; Rose, J. E.; Shaw, M. D. M.; Strathdee, Ann. Dept. of Neurosurgery, Wessex Neurological Centre, Southampton General Hospital, Southampton S09 4XY, England **The effect of sodium salicylate on cerebral blood flow and metabolism.** British Journal of Pharmacology. 68(3):407-411, 1980.

Sodium salicylate, a prostaglandin synthesis inhibitor, reduced the response of cerebral circulation to hypercapnia in baboons. One hour after i.v. administration of 50mg/kg sodium salicylate, baseline cerebral blood flow (CBF) and oxygen consumption (CMR02) were not altered, but the CBF response to hypercapnia was reduced by 41%. During the second hour after injection, CMR02 increased by 26%, CBF at normocapnia increased by 31%, and CBF response to hypercapnia decreased to 67% of baseline value. A 200mg/kg dose of sodium salicylate increased CMR02 by 65% and did not significantly alter CBF at normocapnia or hypercapnia. 17 references. (Author abstract modified)

001417 Pilc, A.; Rogoz, Zofia; Byrska, Bozena. Institute of Pharmacology, Polish Academy of Sciences, 12 Smetna Str., 31-343 Krakow, Poland **Some central effects of impromidine, a potent agonist of histamine H2 receptors.** Neuropharmacology. 19(10):947-950, 1980.

Intraventricular injection of impromidine in rats produced a dose dependent hypothermia, which was antagonized by cimetidine and metiamide. Impromidine produced a hypothermia at doses five to ten times lower than doses of other H2 stimulants, therefore it can be regarded as a potent agonist of histamine H2 receptors in the CNS. Impromidine did not change the gross behavior of animals, but reduced the exploratory activity of rats, although this action was not antagonized by cimetidine. Impromidine also reduced the level of serotonin in the hypothalamus with a concomitant increase in levels of 5-HIAA, but did not produce head twitches in tranylcypromine-treated rats. 14 references. (Author abstract)

001418 Piva, F.; Martini, L.; Motta, M. Dept. of Endocrinology, University of Milano, Milano, Italy **A pharmacological analysis of the role of the amygdala in the control of gonadotropin and prolactin secretion.** Advances in Biochemical Psychopharmacology. 24:425-435, 1980.

The possible influence of the amygdala on luteinizing hormone (LH), follicle stimulating hormone (FSH), and prolactin (PRL) secretion was studied through a pharmacological approach, i.e., by implanting bilaterally in the area of the basomedial nucleus of long-term castrated female rats drugs known to mimic or to antagonize adrenergic or cholinergic transmission. Results suggest that the mechanisms which control LH and FSH secretions are not identical. The basomedial portion of the amygdala was found to possess several types of neurovegetative receptors involved in the control of secretion of LH, FSH, and PRL. These include: 1) alpha-adrenergic receptors; 2) beta-adrenergic receptors; 3) dopaminergic receptors; 4) muscarinic cholinergic receptors; and 5) nicotinic cholinergic receptors. 35 references.

001419 Pohl, M.; Mares, P.; Fischer, J. Institute of Physiology, Czechoslovak Academy of Sciences, Videnska 1083, 142 20 Prague 4, Czechoslovakia **Influence of dipropylacetic acid on thalamo-cortical responses in rats.** Activitas Nervosa Superior. 22(3):214-215, 1980.

The influence of dipropylacetic acid on cortical self-sustained afterdischarge (SSAD) in the form of either spike and wave rhythm or of serrated waves elicited by rhythmic electrical stimulation of various thalamic nuclei was investigated in 24 adult rats. Stimulation electrodes were introduced into the thalamus or hippocampus, and control stimulation series consisting of single pulses followed by two 15 sec periods of rhythmic stimulation were begun. Fifteen minutes following injection of dipropylacetate, the whole stimulation series was repeated. Dipropylacetate did not potentiate thalamocortical spindles whereas both clonazepam and phenobarbital strongly facilitated their appearance and duration. Suppressive action on the spike and wave type of SSAD was similar to that obtained with clonazepam, which is in agreement with clinical data on the efficacy of both drugs against generalized epilepsies. 3 references.

001420 Proudfit, Herbert K. Dept. of Pharmacology, University of Illinois, Medical Center, Chicago, IL 60612 **Effects of raphe magnus and raphe pallidus lesions on morphine-induced analgesia and spinal cord monoamines.** Pharmacology Biochemistry and Behavior. 13(5):705-714, 1980.

The role of bulbospinal serotonin containing neurons found in the nucleus raphe magnus and nucleus raphe pallidus in the mediation of morphine-induced antinociception was investigated. Lesions were effected using both electrolytic coagulation and the axon sparing technique of monosodium-L-glutamate injection to ascertain whether the effects following lesions in the area of the medullary raphe nuclei are due to destruction of neuronal perikarya or fibers passing near these nuclei. These studies revealed that lesions of both the raphe magnus and raphe pallidus resulted in decreased nociceptive thresholds and attenuation of morphine-induced analgesia. Such effects were observed regardless of the lesioning method used, which suggests that destruction of neurons in these nuclei was responsible for lesion-induced effects. In addition, lesion-induced changes in spinal cord serotonin content and morphine analgesia were significantly correlated, which lends support to the conclusion that the bulbospinal serotonin systems are necessary for the mediation of morphine effects. Furthermore, no correlation was observed between changes in spinal cord norepinephrine content and morphine analgesia. This observation suggests that lesion-induced damage to bulbospinal noradrenergic fibers which pass near the midline does not contribute to the attenuation of morphine analgesia resulting from raphe lesions. 73 references. (Author abstract modified)

001421 Rabe, L. S.; Buck, S. H.; Moreno, L.; Burks, T. F.; Dafny, N. Dafny: Dept. of Neurobiology and Anatomy, University of Texas Medical School, PO Box 20708, Houston, TX 77025 **Neurophysiological and thermoregulatory effects of capsaicin.** Brain Research Bulletin. 5(6):755-758, 1980.

The effects in rats of peripherally administered capsaicin, a homovanillic acid derivative which occurs as the pungent ingredient in peppers of the Capsicum family, on body temperature and on brain neurophysiological activity were investigated. Capsaicin produced a rapid, long-lasting fall in body temperature. A second dose given 4.5 hr after the first dose showed a moderate decrement in hypothermic effect. The same dose of capsaicin caused discernible changes in deep EEG activity in the anterior hypothalamus (AH), medial habenula (HB), substantia nigra (SN), and dorsal raphe (DR). The EEG changes were more pronounced at doses of 10 and 20mg/kg. Capsaicin modified sensory evoked responses recorded from all four brain areas. Response amplitudes after acoustic stimulation were increased at all doses of capsaicin in a dose related pattern. Photic evoked responses, like body temperature effects, showed diminished effects with second and third doses. Peripherally administered capsaicin, therefore, can affect body temperature and brain electrical activity. 15 references. (Author abstract modified)

001422 Racagni, G.; Bruno, F.; Bugatti, A.; Parenti, M.; Apud, J. A.; Santini, V.; Carenzi, A.; Groppetti, A.; Cattabeni, F. Institute of Pharmacology and Pharmacognosy, University of Milano, I-2019 Milano, Italy **Behavioral and biochemical correlates after haloperidol and clozapine long-term treatment.** Advances in Biochemical Psychopharmacology. 24:45-51, 1980.

The mechanisms that regulate striatal dopamine (DA) neuronal activity were studied following short-term and long-term treatment with a cataleptogenic (haloperidol) and a noncataleptogenic (clozapine) antipsychotic drug. Topics discussed include: the effect of single and repeated doses of haloperidol and clozapine on behavior and striatal DA metabolism in the rat; and the regulating mechanisms of striatal DA metabolite formation after neuroleptic treatment. Results indicate: 1) that differences in extrapyramidal side-effects elicited by various neuroleptics are not reflected in effects on striatal DA metabolite levels (DOPAC and homovanillic acid); and 2) that the possible mechanisms that regulate DOPAC and homovanillic acid formation are localized within the striatum and are independent from the integrity of firing rate of DA neurons. 24 references.

001423 Raese, Joachim D.; Edelman, Arthur M.; Makk, George; Bruckwick, Eleanor A.; Lovenberg, Walter; Barchas, Jack D. Dept. of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA 94305 **Brain striatal tyrosine hydroxylase: activation of the enzyme by cyclic AMP-independent phosphorylation.** Communications in Psychopharmacology. 3(5):295-301, 1979.

Tyrosine hydroxylase was purified from bovine striatum to apparent homogeneity, as judged by electrophoresis under dissociating conditions. Incubation of the enzyme with an adenosine 3':5'-monophosphate independent protein kinase, highly purified from rat brain, and (gamma-32P)ATP/magnesium ion resulted in phosphorylation and activation of tyrosine hydroxylase. Results suggest that depolarization-induced activation of the enzyme in vivo may not involve changes in cyclic nucleotide levels. 28 references. (Author abstract modified)

001424 Raiteri, Maurizio; Cerrito, Franca; Casazza, Gianna; Levi, Giulio. Institute of Pharmacology, Catholic University, I-00168 Rome, Italy **Presynaptic dopamine receptors in striatal nerve endings: absence of haloperidol-induced supersensitivity.** Advances in Biochemical Psychopharmacology. 24:37-43, 1980.

Presynaptic dopamine (DA) receptors in striatal nerve endings were examined for indications of supersensitivity induced by chronic haloperidol administration. Topics discussed include: the validity of the experimental procedure used for studying presynaptic receptors; the effect of DA agonists on DA release after long-term haloperidol treatment; the effect of apomorphine on dopamine synthesis after long-term haloperidol treatment; and localization of receptors mediating the inhibition of DA synthesis by DA agonists. The data are not easily compatible with the existence of autoreceptors on the external membrane of striatal DA terminals. 26 references.

001425 Rangaraj, N.; Kalant, H. Kalant: Dept. of Pharmacology, University of Toronto, Toronto, Ontario, Canada M5S 1A8 **Alpha adrenoreceptor mediated alteration of ethanol effects on (Na K)-ATPase of rat neuronal membranes.** Canadian Journal of Physiology and Pharmacology. 58(11):1342-1346, 1980.

The noradrenaline (NA) sensitization of rat brain (Na plus K) ATPase to inhibition by ethanol was investigated in the P2 mitochondrial fraction and in the partially purified enzyme (heavy microsomes). The effect of NA increases with the degree of enrichment of the enzyme: 0.1 mM NA plus 0.05M ethanol produced 27% inhibition in whole brain homogenates, 40% in 2.5 fold purified P2 fractions, and 45% in 5 fold purified microsomal fractions. The sensitization by NA was prevented by 0.1mcM phentolamine but not by 100mcM propranolol. Adrenaline and phenylephrine also sensitized the enzyme to ethanol inhibition in all of the fractions, but isoproterenol did not. For all three alpha agonists, the degree of sensitization was concentration dependent and the degree of reversal of this effect varied with the concentration of phentolamine added. These findings suggest that the NA plus ethanol interaction is a direct effect on the membrane, probably mediated by an alpha receptor modified perturbation of the membrane microenvironment of the enzyme. 12 references. (Author abstract modified)

001426 Rappaport, Michael Steven. University of Michigan **Rat brain steady state levels of cyclic nucleotides as an endpoint of LSD-like hallucinogen effects. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):1737-B, 1980. Ann Arbor, Univ. Microfilms No. 8025749, 194p., 1980.

The effects of hallucinogens representing different chemical categories on a mammalian CNS were examined in vivo. Three drugs, 3,4-methylene-dioxyamphetamine (MDA), N,N-dimethyltryptamine (DMT), and 5-methoxy-N,N-dimethyltryptamine (5-MeODMT) were compared for their effects on the concentration of cyclic nucleotides in rat brain. Neither MDA or 5-MeODMT, nor chemically-induced increases in brain serotonin concentrations had any effect on cyclic adenosine monophosphate concentrations in neonatal colliculi or remaining rat brain. The effect of pretreatment with methysergide suggests a serotonergic mediation of the cyclic guanosine monophosphate (GMP) increase in response to 5-MeODMT. The absence of an effect of MDA may indicate that the cyclic GMP increase is not an essential correlate of LSD-like hallucinogen activity. Further study of the neonatal rat collicular cyclic GMP response may establish a new in vivo endpoint of CNS serotonin receptor stimulation. (Journal abstract modified)

001427 Rastogi, R. B.; Singhal, R. L.; Lapierre, Y. D. Singhal: Dept. of Pharmacology, School of Medicine, University of Ottawa, 275 Nicholas St., Ottawa, Ontario, Canada K1N 9A9 **Thyrotropin releasing hormone: neurochemical evidence for the potentiation of imipramine effects on the metabolism and uptake of brain catecholamines.** Psychopharmacology. 72(1):85-91, 1980.

The effects of chronic exposure to imipramine and thyrotropin releasing hormone, alone and in combination, have been investigated on tyrosine hydroxylase activity as well as on the levels of norepinephrine, dopamine, and their respective metabolites in certain areas of rat brain. Repeated injections of thyrotropin releasing hormone (TRH) increased catecholamine synthesis and release. Daily administration of imipramine decreased the uptake of 3H-norepinephrine in P2 pellets by 27%. When TRH was injected concurrently with imipramine, this tripeptide significantly potentiated the effects of imipramine on the levels of homovanillic acid and 4-hydroxy-3-methoxyphenylglycol. These findings demonstrate that whereas TRH elicits rapid mood elevating effect probably by increasing the runover of catecholamines, imipramine acts by blocking their neuronal reuptake. In addition, these data provide a possible neurochemical basis for the reported potentiation of tricyclic antidepresante action by thyrotropin releasing hormone in depressed patients. 51 references. (Author abstract modified)

001428 Rastogi, Ram B.; Lapierre, Yvon D.; Singhal, Radhey L.; Nair, N. P. V. Douglas Hospital Research Institute, Montreal, Ontario, Canada **Evidence for involvement of dopamine in the action of diazepam: potentiation of haloperidol and chlorpromazine action in the brain.** Advances in Biochemical Psychopharmacology. 24:283-289, 1980.

The effects of diazepam alone and in combination with haloperidol or chlorpromazine on behavioral activity as well as dopamine (DA) metabolisms in rat brain were investigated. Like short-term injection, chronic treatment with diazepam diminished the utilization of DA as evidenced by low concentration of homovanillic acid and high levels of amine in several brain regions examined. Behavioral changes produced by chronic haloperidol or chlorpromazine treatment became more pronounced when diazepam was given concurrently with neuroleptics. Similarly, concurrent administration of diazepam and neuroleptics further reduced the decreased levels of homovanillic acid and tyrosine hydroxylase activity normally seen following neuroleptic administration. It is suggested that diazepam, by inhibiting the release of DA, produces more profound scarcity of DA at the vicinity of receptor sites. 32 references.

001429 Ray, A. K.; Dey, P. K. Neurophysiology Research Unit, Dept. of Physiology, Institute of Medical Sciences, Banaras Hindu University, Varanasi 221005, India **Morphine analgesia following its infusion into different liquor spaces in rat brain.** Archives Internationales de Pharmacodynamie et de Therapie. 246(1):108-117, 1980.

Infusion of morphine (1mcg) into the lateral ventricle, fourth ventricle, subarachnoid space beneath the brainstem, and cisterna magna induced analgesia (delayed tail-flick response to radiant heat) in male CF rats. Of all the liquor spaces, the structures on the ventral surface of the brainstem caudal to the fossa interpeduncularis were the most sensitive to the antinociceptive action of morphine. A possible explanation of the analgesic action elicited from the ventral surface of the brainstem is offered. 18 references. (Author abstract modified)

001430 Regan, John W.; Yamamura, Henry I.; Yamada, Shizuo; Roeske, William R. Roeske: Dept. of Internal Medicine, University of Arizona Health Sciences Center, Tucson, AZ 85724 **Renal benzodiazepine binding increases during deoxycorticosterone/salt hypertension in rats.** European Journal of Pharmacology. 67(1):167-168, 1980.

The binding of (3H)flunitrazepam was studied in Sprague-Dawley rats made hypertensive by treatment with deoxycorticosterone acetate (DOCA) and sodium chloride. Results showed that renal benzodiazepine binding increased in rats given the DOCA/salt treatment. No significant change in benzodiazepine binding was observed in brain membranes of the DOCA/salt treated rats. 5 references.

001431 Reichl, Richard; Walland, Alexander. Walland: Dept. of Pharmacology, C. H. Boehringer Sohn, D-6507 Ingelheim, West Germany **Inhibition of neurosympathetic cerebroarterial constriction by clonidine in cats.** European Journal of Pharmacology. 68(3):349-357, 1980.

Clonidine inhibited neurosympathetic vasoconstriction in the cerebrovascular bed in cats. The inhibitory effect of clonidine was reduced by yohimbine. Results suggest that clonidine inhibits sympathetic neurotransmission in pial arteries by activation of prejunctional alpha-adrenoceptors. 27 references. (Author abstract modified)

001432 Richelson, Elliott. Dept. of Psychiatry, Mayo Foundation, Rochester, MN **Psychotropic drug blockade of histamine H1 receptors.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 106-109).

Tricyclic antidepressants, neuroleptics and other psychotropic drugs were tested for their ability to antagonize histamine H1 receptors with the use of histamine H1 receptor mediated cyclic GMP formation by cultured mouse neuroblastoma cells as an assay for this receptor. In this assay system, the H1 specific antagonist pyrilamine and the commonly-used antihistamine diphenyhydramine had equilibrium dissociation constants of 2nM and 20nM, respectively. The most potent drug of the series was the tricyclic antidepressant doxepin and the most potent neuroleptic was clozapine. The potency of these drugs at blocking histamine H1 receptors may directly relate to their ability to cause sedation and drowsiness. 23 references. (Author abstract)

001433 Richelson, Elliott; Gorkin, Robert A. Dept. of Psychiatry, Mayo Foundation, Rochester, MN **Lithium ion entry into cultured cells of neural origin.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1161-1166).

Cultured cells of neural origin (mouse neuroblastoma clone N13-115 and rat glioma C-6) were used to study lithium ion (Li) entry and distribution. Using veratridine, it was shown that Li enters mouse neuroblastoma cells to a greater extent when their sodium channels are open than when they are closed. Steady-state levels of Li were achieved for these cells by 60 min and for rat glioma cells by 6 to 9 days. Steady-state intracellular Li levels increased linearly with increases in the external Li concentration for both mouse neuroblastoma cells (in the presence or in the absence of veratridine) and rat glioma cells. High external Na concentrations markedly inhibited Li entry into mouse cells in the absence of veratridine. In the absence of K, Li accumulation by both cell types was increased. At high K concentrations, Li accumulation was unchanged for neuroblastoma cells and was reduced for glioma cells. These data suggest that Li accumulates in vivo to a greater extent in neurons which are more electrically active and that glial tissue may play an important role in the Li economy of the CNS. 16 references. (Author abstract modified)

001434 Richert, John R.; Kies, Marian W.; Alvord, Ellsworth C., Jr. Section on Myelin Chemistry, Laboratory of Cerebral Metabolism, NIMH, Bethesda, MD 20205 **Enhanced transfer of experimental allergic encephalomyelitis with Lewis rat lymph node cells. (Unpublished paper).** Bethesda, MD, NIMH, 1980, 23 p.

Data are presented to show that it is possible to transfer experimental allergic encephalomyelitis (EAE) with as few as 1,000,000 sensitized lymph node cells (LNC) after culture with myelin basic protein (BP). LNC were obtained from female Lewis rats at the height of clinical disease, 11 days after sensitization with BP in complete Freund's adjuvant. After 48 hours of culture with 1mcg/m1 BP, transfer of EAE occurred in half the recipients of 1,000,000 cells and in nearly all of the recipients of 2 x 10,000,000 cells. Homogenized cells and concentrated supernatant fractions from cell cultures did not transfer EAE. Removal of B-cells further increased the effectiveness of transfer, but only to the extent that B-cell depletion removed inactive cells from the total number transferred. LNC capable of both enhanced transfer and BP-induced proliferation were found in rats after recovery from EAE as well as at the height of disease. This rules out clonal deletion as the mechanism of recovery from EAE. Adoptive transfer with LNC could not be enhanced after culture with concanavalin-A (Con-A). This differentiates the LNC population from spleen cells, which can be activated by Con-A, and suggests that enhanced transfer of EAE may be attained by more than one mechanism. 21 references. (Author abstract modified)

001435 Ritzmann, Ronald F.; Bhargava, Hemendra, N. Bhargava: Dept. of Pharmacognosy and Pharmacology, University of Illinois at the Medical Center, Chicago, IL 60612 **The effect of cyclo (Leu-Gly) on chemical denervation supersensitivity of dopamine receptors induced by intracerebroventricular injection of**

6-hydroxydopamine in mice. Life Sciences. 27(22):2075-2080, 1980.

The effect of cyclo (Leu-Gly) on chemical denervation supersensitivity of postsynaptic dopamine (DA) receptors induced in mice by intracerebroventricular injection of 6-hydroxydopamine (6-OHDA) was investigated. Fourteen days after the 6-OHDA injection, mice exhibited greater spontaneous locomotor activity and hypothermic responses when challenged intraperitoneally with apomorphine. Whole brain levels of DA were reduced by 50%. Daily subcutaneous administration of cyclo (Leu-Gly) for 14 days inhibited the development of dopamine receptor supersensitivity induced by 6-OHDA, as evidenced by the blockade of an apomorphine-induced locomotor and hypothermic effect. Cyclo did not alter the depletion of brain DA induced by 6-OHDA. These data suggest that cyclo can block the development of DA receptor supersensitivity induced by 6-OHDA without protecting the neurons from dopamine depletion. 27 references. (Author abstract modified)

001436 Robertson, Harold A. Dept. of Pharmacology, Sir Charles Tupper Medical Building, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H7 **Harmaline-induced tremor: the benzodiazepine receptor as a site of action.** European Journal of Pharmacology. 67(1):129-132, 1980.

Harmaline, a beta-carboline, appeared to interact with the benzodiazepine receptor in male ICR mice. Tremors induced by harmaline can be prevented by diazepam, and harmaline displaces specifically bound 3H-flunitrazepam from the benzodiazepine receptor. Harmaline showed a low affinity for the receptor, but tremorogenic doses produced brain concentrations sufficient to occupy some benzodiazepine binding sites. 8 references. (Author abstract modified)

001437 Robinson, Joe Sam; Moody, Robert A. Moody: Division of Neurosurgery, Cook County Hospital, 1825 West Harrison St., Chicago, IL 60612 **Influence of respiratory stress and hypertension upon the blood-brain barrier.** Journal of Neurosurgery. 53(5):666-673, 1980.

The effects of acute hypertension and respiratory stress induced by Aramine (metaraminol bitartrate) upon blood-brain barrier (BBB) permeability to horseradish peroxidase (HRP) were studied in adult inbred white rats. The BBB permeability was quantitated by slicing the brain of each animal into 500 micro/meter thick sections, incubating the sections using the Reese-Karnovsky method, and counting all observed HRP perivascular exudates. No evidence of BBB compromise or significant elevation of blood pressure (BP) was observed in the following experimental groups: 1) control group of five animals; 2) hyperventilated group of five animals; and 3) anoxic stress group of five animals. However, in a group of 15 animals subjected to anoxic stress followed by hyperventilation, in addition to extreme changes in the levels of arterial blood gases, a significant BP increase occurred, as well as significant BBB opening. Likewise, a final group of 10 animals given intravenous Aramine displayed a significant systemic BP elevation, accompanied by BBB opening. The variable most strongly associated with the degree of barrier opening was the rate of BP rise. 34 references. (Author abstract modified)

001438 Robinson, Terry E.; Green, Daniel J. Neuroscience Laboratory, 1103 E. Huron, Ann Arbor, MI 48109 **Effects of hemicholinium-3 and choline on hippocampal electrical activity during immobility vs. movement.** Electroencephalography and Clinical Neurophysiology. 50(3-4):314-323, 1980.

The effects of various manipulations of brain cholinergic activity on hippocampal rhythmical slow activity (RSA or theta) occurring during behavioral immobility (IRSA) or occurring during movements such as walking, running or swimming (MRSA) were investigated. The IRSA elicited by electrical stimulation of the reticular formation in urethanized rats was severely attenuated by intraventricular injections of hemicholinium-3 (HC-3), a drug which depletes brain acetylcholine. A subsequent systemic injection of choline chloride restored IRSA elicited by electrical stimulation. In contrast, HC-3 had no deleterious effects on the MRSA recorded from freely-moving rats. Therefore, atropine sensitive IRSA is also HG-3 sensitive, and atropine resistant MRSA is also HC-3 resistant. These results support the hypothesis that there are two pharmacologically distinct neurochemical systems which may produce hippocampal RSA. It is suggested that acetylcholine is necessary for the production of IRSA, but is not necessary for the production of MRSA. 48 references. (Author abstract modified)

001439 Rokyta, R.; Mares, P.; Sobotka, P. Institute of Pathophysiology, Charles University, Lidicka 1, 301 67 Plzen, Czechoslovakia **Convulsant effects of aminooxyacetic acid during ontogensis in rats.** Activitas Nervosa Superior. 22(3):216-217, 1980.

The ontogenetic development of the convulsant effects of aminooxyacetic acid (AOAA) was studied in rats aged 7, 12, 25, and 90 days. AOAA was found to elicit generalized tonic/clonic seizures in all age group studies, but there were quantitative differences among various age groups. Adult rats convulsed only rarely, even after the highest dose used (1.0g/kg). Twenty-five-day-old rats were substantially more sensitive than adult ones, and 12-day-old rats exhibited sensitivity equal to that of the 25-day-old rats. However, the 7-day-old rats were more resistant to the convulsant effects of AOAA than either the 12-day-old or 25-day-old rats. It is concluded that the convulsant action of AOAA is not caused by inhibition of GABA formation. 4 references.

001440 Rommelspacher, Hans; Nanz, Christel; Borbe, Harald O.; Fehske, Klaus J.; Muller, Walter E.; Wollert, Uwe. Muller: Pharmakologisches Institut der Universitat Mainz, Obere Zahlbacher Strasse 67, D-6500 Mainz, West Germany **1-Methyl-beta-carboline (harmane), a potent endogenous inhibitor of benzodiazepine receptor binding.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(1):97-100, 1980.

The interaction of several beta-carbolines with specific (3H)flunitrazepam binding to rat brain membranes was investigated. Harmane and norharmane were at least 10 times more potent than harmine, harmaline, and several tetrahydro derivatives as inhibitors of specific (3H)flunitrazepam binding. Since harmane has been found in rat brain and human urine, it may be an endogenous ligand of the benzodiazepine receptor. 27 references. (Author abstract modified)

001441 Rosenberger, Lois B.; Yamamura, Henry I.; Roeske, William R. Roeske: Dept. of Internal Medicine, University of Arizona Health Sciences Center, Tucson, AR 85724 **The regulation of cardiac muscarinic cholinergic receptors by isoproterenol.** European Journal of Pharmacology. 65(1):129-130, 1980.

The finding that isoproterenol decreased the percentage of high affinity muscarinic receptors in cardiac homogenates and that this effect can be specifically blocked by propranolol is reported. These data are the first to demonstrate that occupancy of the beta-adrenergic receptor by an agonist can influence muscarinic receptor affinity. These results are compatible with the concept that the muscarinic receptor and the beta-adrenergic receptor have an interdependent linkage in cardiac membranes. 5 references.

001442 Rosenblatt, Jack E.; Carmen, Rebecca del; Wyatt, Richard Jed. Laboratory of Clinical Psychopharmacology,

NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **A high affinity GTP binding site in rat brain. (Unpublished paper).** Washington, DC, NIMH, 1980. 3 p.

The procedure by which the presence of specific high affinity binding sites for 3H-guanosine triphosphate (3H-GTP) in rat caudate was demonstrated is described. Scatchard analysis of GTP-displaceable 3H-GTP binding indicated two populations of binding sites (a higher affinity lower capacity site and a lower affinity higher capacity binding site). The possibility that a proportion of high affinity caudate binding of 3H-GTP is occurring to the nucleotide binding protein associated with cell membrane neurotransmitter receptors is suggested. Thus, the study of high affinity 3H-GTP binding may offer a new approach to the study of interactions among neurotransmitters, cell membrane receptors, and adenylate cyclase activation in brain. 2 references.

001443 Rosenblatt, Jack E.; Pert, Agu; Layton, Bruce; Bunney, William E., Jr. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Chronic lithium reduces (3H)spiroperidol binding in rat striatum.** European Journal of Pharmacology. 67(2/3):321-322, 1980.

Dopamine receptor density was decreased in the corpus striatum of Sprague-Dawley rats fed a diet adulterated with lithium for 21 days. The difference in 3H-spiroperidol binding in lithium-treated animals and controls was significant within 14 days and persisted for 1 day after cessation of lithium treatment; 3 days after lithium was terminated, 3H-spiroperidol binding was similar in lithium-treated and control groups. The time course of this effect is consistent with the clinical characteristics of lithium's antimanic effect. 4 references.

001444 Rosenblatt, Jack E.; Shore, David; Wyatt, Richard Jed; Pert, Candace B. William A. White Building, Saint Elizabeths Hospital, Washington, DC 20032 **Increased renal neuroleptic binding in spontaneously hypertensive rats.** European Journal of Pharmacology. 67(2/3):317-320, 1980.

Saturable, high affinity, stereospecific binding of 3H-spiroperidol to Wistar-Kyoto rat renal membranes was demonstrated. The order of potency of various neuroleptics in displacing 3H-spiroperidol binding was the same for renal cortex and caudate. Renal cortical 3H-spiroperidol binding was elevated in spontaneously hypertensive rats. 7 references. (Author abstract modified)

001445 Rosenfeld, Gary C.; Strada, Samuel J.; Robison, G. Alan. Dept. of Pharmacology, University of Texas Medical School, Houston, TX 77025 **Cyclic nucleotides and the central effects of opiates: an overview of current research.** Advances in Biochemical Psychopharmacology. 20:261-279, 1979.

The role of cyclic nucleotides in the action of opiates is discussed in light of research in cultured cell lines, brain tissue, and whole animals. It is suggested that opiate alkaloids may have a dual effect on neurons with opiate receptors. Acute treatment with morphine inhibits adenylyl cyclase activity in these neurons, exaggerating the normal physiological effect of endogenous opiates, reducing the level of cyclic AMP, and ultimately inducing analgesia and euphoria. However, chronic treatment with opiate alkaloids induces a relatively prolonged increase in adenylyl cyclase, which tends to be masked by the direct inhibitory effect of the alkaloids. Thus, increasingly large doses are needed to produce a given degree of euphoria and analgesia. 88 references.

001446 Rosenfeld, J. Peter; Stocco, Susan. Dept. of Psychology, Cresap Neuroscience Laboratory, Northwestern University, Evanston, IL 60201 **Differential effects of systemic versus intracranial injection of opiates on central, orofacial and lower body nociception: somatotypy in bulbar analgesia systems.** Pain. 9(3):307-318, 1980.

The differential effects of systemic and intracranial injections of opiates in the bulbar opiate system of the rat was examined. One mcg morphine sulfate of 30mcg(D-ALA2)-met-enkephalin microcannulated into the bulbar nuclei reticularis gigantocellularis and paragigantocellularis produced profound analgesia for orofacial thermal nociception, while having a smaller analgesic effect on tail flick latency, and no effect on aversive stimulation thresholds in midbrain and in the spinal trigeminal nucleus (subnucleus caudalis). Systemic morphine (10mg/kg) producing equivalently profound orofacial analgesia, profoundly affected tail flick latency and trigeminal nuclear stimulation thresholds, while still failing to affect aversive midbrain stimulation threshold. 33 references. (Author abstract modified)

001447 Rosenfeld, M. R.; Makman, M. H.; Ahn, H. S.; Thal, L. J.; Mishra, R. K.; Katzman, R. Dept. of Molecular Pharmacology, Albert Einstein College of Medicine, Bronx, NY 10461 **Selective influence of ergot alkaloids on cortical and striatal dopaminergic and serotonergic receptors.** Advances in Biochemical Psychopharmacology. 23:83-93, 1980.

The interaction of ergot alkaloids with dopamine (DA) and serotonin (5-HT) receptors in the cortex and striatum of Cebus and rhesus monkeys and of rabbits was examined. Results indicate that lisuride acts as a potent stimulator of adenylate cyclase in cortical brain regions and may function as a mixed agonist/antagonist at high concentrations. Lisuride may affect both DA and 5-HT receptors in the cortex, but acts predominantly on 5-HT receptors coupled to adenylate cyclase. The antagonist molindone is selective for 5-HT stimulated cyclase over DA stimulated adenylate cyclase in the cortex. Bromocriptine, lergotrile, and ergonovine may act as agonists in stimulating adenylate cyclase, but are less potent and show different regional specificity than lisuride or d-lysergic acid diethylamide. Antagonist effects on cyclase are more pronounced in the striatum than in the cortex. 33 references.

001448 Rosenfeld, Myrna R.; Makman, Maynard H.; Goldstein, Menek. Dept. of Molecular Pharmacology, Albert Einstein College of Medicine, 1300 Morris Park Ave., Bronx, NY 10461 **Stimulation of adenylate cyclase in rat striatum by pergolide: influence of GTP.** European Journal of Pharmacology. 68(1):65-68, 1980.

Adenylate cyclase activity in homogenates of male Sprague-Dawley rat striatum was stimulated by pergolide, but not by lisuride or bromocriptine. GPT enhanced the stimulation produced by pergolide and had no effect on the other ergots. The pergolide-induced stimulation of adenylate cyclase was inhibited by haloperidol but not by molindone. Results indicate that pergolide acts as an agonist at dopamine receptors coupled to adenylate cyclase in rat striatum. 10 references. (Author abstract modified)

001449 Roshchina, L. F. Lab. farmakologii VNIKhFI, Moscow, USSR **/The effect of clofelin on the bioelectric activity of the brain./ /**Vliyaniye klofelina na bioelektricheskuyu aktivnost' golovnogo mozga. Farmakologiya i Toksikologiya. 43(3):306-310, 1980.

The effect of clofelin on the bioelectric activity of the brain was studied in rabbits and cats. The hypotensive drug clofelin, 2-(2,6-dichlorphenylamino)-2-imidazoline hydrochloride, which is similar to clonidine was injected intravenously in doses of 1, 2, 5, 10, 100 and 500 micrograms per kilogram, and was also instilled into the conjunctival sac of the eye. It exerted a synchronous effect on the EEG of cats and rabbits. Results show that the synchronous effect of clofelin on the EEG of cats and rab-

bits is reversed by iochimbine, decreased by phentolamine, tropaphen, and piroxan, diminished by atropine and benactyzine more than by metacin, and is blocked by amphetamine. The effect of clofelin on the central alpha-adrenoreceptors and a certain influence on the central cholinoreactive systems play an essential role in the mechanism of its sedative action. 13 references. (Journal abstract modified)

001450 Ross, David H.; Cardenas, H. Lee. Div. of Molecular Pharmacology, University of Texas Health Science Center, San Antonio, TX 78284 **Nerve cell calcium as a messenger for opiate and endorphin actions.** Advances in Biochemical Psychopharmacology. 20:301-336, 1979.

The role of calcium in pharmacological and biochemical actions of opiates on the CNS is discussed. Studies of caicium as a regulator of cellular function, the regulation of cellular calcium levels, the role of calcium in opiate and endorphin activity, adaptive changes in calcium metabolism after opiate administration, the influence of opiates on molecular aspects of calcium/membrane interactions, and the functional significance of opiate-induced alterations in synaptosomal calcium are reviewed. It is suggested that calcium and calcium dependent regulator proteins may mediate a number of processes involving neurotransmitter activity. 163 references.

001451 Ross, Svante B. Research and Development Laboratories, Astra Lakemedel AB, S-151 85 Sodertalje, Sweden **Neuronal transport of 5-hydroxytryptamine.** Pharmacology. 21(2):123-131, 1980.

Studies of the neuronal transport and uptake of 5-hydroxytryptamine (5-HT) are reviewed. The effects of tryptamine and amphetamine derivatives, tricyclic antidepressants, and selective 5-HT inhibitors on the neuronal accumulation of 5-HT are discussed. Structural requirements for uptake into serotonergic neurons and the topography of 5-HT uptake sites are also considered. 62 references.

001452 Ross, Svante B.; Ask, Anna-Lena. Research and Development Laboratories, Astra Lakemedel AB, S-151 85 Sodertalje, Sweden **Structural requirements for uptake into serotoninergic neurones.** Acta Pharmacologica et Toxicologica. 46(4):270-277, 1980.

Nonhydroxylated tryptamines and 4-chloroamphetamine were apparently not transported into serotonergic neurons by the membrane 5-hydroxytryptamine (5-HT) carrier. The accumulation and deamination of 14C-tryptamine by mouse brain slices or homogenates of male Sprague-Dawley rat hypothalamus were not inhibited by cocaine or norzimelidine, a selective inhibitor of 5-HT neuronal uptake. The irreversible inhibition of monoamine oxidase by pheniprazine and clorgiline in mouse brain serotonergic synaptosomes was prevented by alpha-methyltryptamine, alpha-ethyltryptamine, and 4-chloroamphetamine. Pretreatment with norzimelidine did not antagonize the preventive effects of these compounds, but did antagonize the partial prevention induced by alpha-ethyl-4-methyl-m-tyramine. 17 references. (Author abstract modified)

001453 Roth, Robert H. Dept. of Pharmacology, Yale University School of Medicine, New Haven, CT 06510 **Dopamine autoreceptors: pharmacology, function and comparison with postsynaptic dopamine receptors.** Communications in Psychopharmacology. 3(6):429-445, 1979.

The pharmacology and function of dopamine (DA) autoreceptors is reviewed. The presence of autoreceptors has been established on dopaminergic nerve terminals and cell soma and possibly dendrites. Autoreceptors are about 10 times more sensitive than postsynaptic dopamine receptors to the effects of DA agonists, but are less responsive to blockade by certain antipsychotic drugs. Exploitation of these differences may lead to the development of more selective therapeutic agents. 53 references.

001454 Ruwe, W. D.; Myers, R. D. Myers: Medical Research Bldg. A, University of North Carolina School of Medicine, Chapel Hill, NC 27514 **The role of protein synthesis in the hypothalamic mechanism mediating pyrogen fever.** Brain Research Bulletin. 5(6):735-743, 1980.

The effects of inhibition of protein synthesis by anisomycin on the pathogenesis of fever and normal thermoregulatory processes were investigated in the conscious and unrestrained cat. Subcutaneous administration of anisomycin prevented the fever normally evoked by intravenous infusion of either S. typhosa or endogenous pyrogen. In addition, systemic pretreatment with anisomycin delayed and/or blocked the fever typically elicited by direct miroinjection into the anterior hypothalamic, preoptic area of the endotoxin. Anisomycin did not alter the hyperthermic response to an anterior hypothalamic injection of either serotonin or prostaglandin. The thermoregulatory capacity of the cat was unaffected by the administration of comparable doses of anisomycin, i.e., the animal was able to maintain normal body temperature when exposed to an ambient temperature of either 10 degrees C or 34 degrees C. Results strongly suggest that the synthesis of new protein within the region of the anterior hypothalamic, preoptic area is a functional requisite for the development of a pyrogen-induced fever. 27 references. (Author abstract modified)

001455 Saavedra, Juan M. Section on Pharmacology, Laboratory of Clinical Science, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Biogenic amines and neuropeptides play a role in the central regulation of genetic hypertension. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 14 p.

Data are presented which implicate catecholamines, serotonin, histamine, vasopressin, somatostatin, and endogenous opiates in the complex central regulatory mechanisms of cardiovascular functions and genetic hypertension. The data show that the levels of catecholamines, histamine, and serotonin are changed in specific brain areas of spontaneously (genetic) hypertensive rats (SHRs). In addition, brain adrenaline metabolism is different in specific areas of the brainstem of another animal model of genetic hypertension, the sodium sensitive rat (Dahl rat). Genetic hypertensive rats also differ from their normotensive controls in the response of the metabolism of the neuropeptides somatostatin and vasopressin to acute immobilization stress, and present a naloxone reversible and propranolol reversible decrease in pain sensitivity when compared to normotensive controls. 24 references.

001456 Saavedra, Juan M. Section on Pharmacology, Laboratory of Clinical Science, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Central biogenic amines and neuropeptides in genetic hypertension. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 22 p.

Data are presented which implicate central biogenic amines and neuropeptides in the regulation of cardiovascular function and in spontaneously (genetic) hypertensive rats (SHR). Catecholamines, histamine, and serotonin levels are changed in specific brainstem and hypothalamic areas of SHRs. The SHRs also differ from their normotensive controls in the response of vasopressin and somatostatin to acute immobilization stress, and SHRs show a naloxone reversible decrease in pain sensitivity when compared to normotensive animals. SHRs present alterations in the central metabolism of noradrenaline, adrenaline, histamine, serotonin, vasopressin and somatostatin. The biochemical changes in the metabolism of putative neurotransmit-

ters are specifically localized to a few key brain areas involved in cardiovascular control or in neuroendocrine regulation. Some of these changes are dependent on the stage of development of the hypertension and/or the age of the animals, and some others become evident only after a stress challenge. 29 references.

001457 Saavedra, Juan M. Section on Pharmacology, Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Spontaneously (genetic) hypertensive rats present a naloxone-sensitive decrease in pain sensitivity. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 6 p.

Data are presented to show that spontaneously hypertensive rats (SHR) are less sensitive to painful stimuli than their normotensive controls, the Wistar-Kyoto (WKY) rats, and that this difference can be eliminated by pretreatment of the animals with the specific opiate antagonist, naloxone. The results indicate that these changes could be related to differences in endogenous opiates or opiate receptors between the two strains. On the basis of the results, the hypothesis of an interaction between changes in catecholamine and opiate metabolism in the brain or peripheral tissues of hypertensive rats is advanced. 21 references. (Author abstract modified)

001458 Saavedra, Juan M. Section on Pharmacology, Laboratory of Clinical Science, NIMH, Bldg. 10, 2D47, Bethesda, MD 20205 **Increased adrenaline, beta-adrenergic receptor stimulation and phospholipid methylation in pineal gland of spontaneously hypertensive rats. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 9 p.

The catecholamine content of pineal glands and the pineal N-acetyltransferase activity were determined in spontaneously hypertensive rats (SHR) and normotensive Wistar-Kyoto control rats. In pineal glands of adult SHRs, dopamine levels increased 34%, adrenaline concentrations increased 152%, and noradrenaline levels decreased by 26%, when compared to the normotensive controls. The results indicate an in vivo correlation between increased beta-adrenergic receptor stimulation and increased methylation of membrane phospholipids in the rat pineal gland, which could result in changes in membrane fluidity and affect the coupling of the beta-adrenergic receptors to the adenylate cyclase. The results are consistent with the hypothesis of an increased uptake of peripheral adrenaline resulting in increased release of noradrenaline from pineal sympathetic nerves in hypertensive rats. 14 references.

001459 Saavedra, Juan M.; Correa, Fernando; Vilar, Andres Negro. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Central aminergic and peptidergic mechanisms in spontaneously (genetic) hypertensive rats. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Brain biogenic amines and neuropeptides were studied in selected individual brain areas of spontaneously hypertensive rats (SHR) and the corresponding normotensive controls, Wistar Kyoto rats (WKY). The synthesis of adrenaline was increased in brainstem nuclei of SHR. Noradrenaline formation was lower in anterior hypothalamic nuclei of SHR. Hypertensive rats showed increased histamine content in the median eminence and other hypothalamic nuclei. Serotonin levels were increased in specific brainstem raphe nuclei of the SHR. Hypothalamic vasopressin increased after stress in the SHR, but not in the WKY. Somatostatin decreased in hypothalamic nuclei of WKY, but not in SHR. Hypertensive rats showed a naloxone sensitive decrease in pain sensitivity when compared with WKY. These results suggest that brain catecholamines, histamine, serotonin, vasopressin, somatostatin, and endogenous opiates particpate in the complex regulation of the central mechanisms in genetic hypertension. (Author abstract)

001460 Sacchetti, E.; Allaria, E.; Conte, G.; de Rosa, A.; Griffi, P. G.; Taroni, P. L.; Resele, L.; Smeraldi, E. Institute of Clinical Psychiatry, Milan University Medical School, Milan, Italy **Multivariate approaches applied to studies of norepinephrine and serotonin uptake.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 137-141).

Requirements for organization and analysis of the data on uptake of monoamines (norepinephrine and serotonin) into synaptosomes were investigated, with emphasis on those which allow for the influence of possible heterogeneity factors. Research with rats suggested that individual differences may play a large role in modulating uptake function. The usefulness of multivariate statistical models which take into account a large number of hypothetical sources of variation was demonstrated. 7 references. (Author abstract modified)

001461 Saelens, J. K.; Simke, J. P.; Neale, S. E.; Weeks, B. J.; Selwyn, M. Research Dept., Pharmaceuticals Div., Ciba-Geigy Corp., Summit, NJ 07901 **Effects of haloperidol and d-amphetamine on in vivo 3H-spiroperidol binding in the rat forebrain.** Archives Internationales de Pharmacodynamie et de Therapie. 246(1):98-107, 1980.

Specific 3H-spiroperidol (3H-Sp) binding was demonstrated in vivo throughout the male Wistar rat forebrain. The highest concentrations of 3H-Sp were found in regions rich in dopaminergic terminals. Acute or repeated administration of low doses of haloperidol decreased in vivo 3H-Sp in subcortical but not cortical regions. A single dose of d-amphetamine substantially increased 3H-Sp binding. Repeated administration of high doses (5mg/kg i.p.) of haloperidol reduced 3H-Sp binding in the forebrain, but binding tended to return to normal levels over the next 8 days. 16 references. (Author abstract modified)

001462 Sato, Hitomi. Dept. of Child Health, Faculty of Science of Living, Osaka City University, 459 Sugimoto-cho, Sumiyoshi-ku, Osaka, Japan **Relationship between serum levels and fast EEG activities in rats by a single administration of phenobarbital.** Electroencephalography and Clinical Neurophysiology. 50(5-6):509-514, 1980.

The relationship between serum levels and fast EEG activities following a single dose of phenobarbital was investigated in rats. Serum level of phenobarbital in three groups of rats were assayed at 1, 2, and 4 hr; EEG was recorded for 15 min before and 1, 2, 4, 8, and 24 hr after phenobarbital administration. In the 20mg/kg group, the beta 2 band was significantly increased from 2 to 4 hr following phenobarbital administration. In the 50mg/kg group, the beta 2 band significantly increased from 2 to 8 hr, and the theta band decreased at 8 hr. In the 100mg/kg group, the beta 2 band was significantly increased during 24 hr and the theta band was significantly decreased during 2 and 8 hr. When serum levels became more than 25mcg/ml, the beta 1 and beta 2 bands showed a significant increase, whereas, above 35mcg/ml, theta waves decreased significantly. Results suggest that the significant increase of fast waves resulted from inhibition of the reticular activating system and theta waves mainly resulted from depression of the cortex. 15 references. (Author abstract modified)

001463 Savage, D. D.; Mendels, J.; Frazer, A. Dept. of Pharmacology, University of Pennsylvania School of Medicine, Philadelphia, PA **Decrease in (3H)-serotonin binding in rat brain produced by the repeated administration of either monoamine oxidase inhibitors or centrally acting serotonin agonists.** Neuropharmacology. 19(11):1063-1070, 1980.

The effects of repeated administration of monoamine oxidase (MAO) ihhibitors or serotonin (5-HT) agonists on (3H)-5-HT

binding and 5-HT concentrations in male Sprague-Dawley rat cerebral cortex were examined. Clorgyline caused a significant reduction in (3H)-5-HT binding, but this effect was blocked by pretreatment with drugs that deplete brain 5-HT. Pretreatment with alpha-methyl-p-tyrosine did not block the clorgyline-induced reduction in (3H)-5-HT binding. Repeated treatment with nialamide lowered (3H)-5-HT binding and the return of binding sites was correlated temporally with the recovery of normal 5-HT concentrations. Repeated administration of quipazine or trifluoromethylphenylpiperazine also decreased (3H)-5-HT binding. Results suggest that MAO inhibitors reduce (3H)-5-HT binding indirectly, by increasing the exposure of 5-HT receptors to the indolealkylamine. 45 references. (Author abstract modified)

001464 Scatton, B. Research Dept., SYNTHELABO-L.E.R.S., F-92220 Bagneux, France **Effect of repeated treatment with neuroleptics on dopamine metabolism in cell bodies and terminals of dopaminergic systems in the rat brain.** Advances in Biochemical Psychopharmacology. 24:31-36, 1980.

The effect of repeated treatment with neuroleptics on dopamine (DA) metabolism in cell bodies and terminals of dopaminergic systems in the rat brain was investigated. Results suggest that autoreceptors are involved in tolerance. Thus, tolerance with regard to the increase in striatal DA metabolites is not affected by intrastriatal kainate injection, a procedure destroying the major part of the striatal postsynaptic DA receptors (considering the loss of DA sensitive adenylate cyclase as an index of destruction of postsynaptic DA receptors). Results also suggest that the attenuation of the increase in striatal DA metabolite levels occurring during repeated treatment with neuroleptics may be connected, at least partially, to the development of DA autoreceptor supersensitivity. 22 references.

001465 Scheel-Kruger, J.; Christensen, A. V. Psychopharmacological Research Laboratory, Sct. Hans Mental Hospital, DK-4000 Roskilde, Denmark **The role of gamma-aminobutyric acid in acute and chronic neuroleptic action.** Advances in Biochemical Psychopharmacology. 24:233-243, 1980.

A series of studies of the role of GABA in acute and chronic neuroleptic action is described. Results are presented which demonstrate that the interaction between the GABA/dopamine systems is considerably more complex than previously considered. The data show that GABAergic drugs increase dopamine-dependent stereotyped gnawing and decrease the antistereotypic effect of neuroleptics, especially of the butyrophenone type. Scopolamine and diazepam also strongly antagonize the antistereotypic effect of the butyrophenones. The GABA agonist 4,5,6,7-tetra (5,4-c)pyridin-3-ol (THIP) induced no major changes, only a weak short lasting reduction of the dopaminergic hypersensitivity induced by chronic treatment with the neuroleptic drug teflutixol. 31 references.

001466 Scholfield, C. N. Dept. of Physiology, Medical Biology Centre, Queen's University of Belfast, 97 Lisburn Rd., Belfast BT9 7BL, England **Convulsants antagonise inhibition in the olfactory cortex slice.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(1):29-36, 1980.

Single cell intracellular and gross extracellular recording techniques were used to study the effects of GABA antagonists and other convulsants on neurons of the isolated guinea-pig olfactory cortex slice preparation. Bicuculline, picrotoxin, strychnine, leptazol, bemegride, theophylline, and d-tubocurarine increased the duration and amplitude of the excitatory postsynaptic potential, thereby producing a seizure-like discharge. These drugs reduced and shortened the peak conductance increase during the inhibitory postsynaptic potential (IPSP) in normal solution and after the IPSP had been prolonged by the addition of a barbiturate. Results suggest that these drugs antagonize synaptic inhibition through a common mechanism, perhaps by reducing the effect of neurally released GABA. 26 references. (Author abstract modified)

001467 Schreiber, Robert Alan. Center for Health Sciences, University of Tennessee, Knoxville, TN 37916 **Energy reserves and sound-induced seizures. (Unpublished paper).** Final Report, NIMH Grant R03-MH-32853, 1980. 38 p.

Levels of energy metabolites in various areas of brain were measured: 1) at various ages in DBA/2J mice (before, during, and after developmentally determined SAGS) and in C57BL/6 mice (not normally SAGS at any age); 2) in C57BL/6J mice at various ages after acoustic priming, during, and after the period of priming induced SAGS from 16 to 28-days-old; and 3) in both C57BL/6J and DBA/2J mice sacrificed at various intervals (seconds) after the onset of the acoustic stimulus, before the onset of AGS. Also, the role of the drug n-dipropylacetate in anticonvulsive action was investigated. A hypothetical model is proposed to explain developmentally determined susceptibility to AGS in some strains of mice, based on the idea that in GAS prone mice the transition from one source of brain energy to the other does not progress smoothly, and, as a consequence, the mice might have difficulty for a brief developmental period in synthesizing or storing sufficient brain energy reserves. Therefore, mice susceptible to AGS may briefly have insufficient access to energy in some brain areas to maintain organized neural activity during the initial few seconds of a large external stimulus-induced energy expenditure, until such time as energy repletion processes can begin to replace used stores. 12 references.

001468 Scoto, G. M.; Spadaro, C.; Spampinato, S.; Arrigo-Reina, R.; Ferri, S. Institute of Pharmacology and Pharmacognosy, University of Catania, Catania, Italy **Prostaglandins in the brain of rats given, acutely, and chronically, a hyperthermic dose of met-enkephalin.** Psychopharmacology. 60(2):217-219, 1979.

An enhanced prostaglandin-like activity is shown in homogenates of brain from rats treated intracerebroventricularly with 100mcg of met-enkephalin. The increase is significantly reduced by naloxone pretreatment. A relationship is proposed between generation of prostaglandins in the brain following met-enkephalin administration and hyperthermic effect of the opiate-like factor in the rat. Normalization of prostaglandin-like activity following chronic administration of met-enkephalin in the rat may also account for the development of tolerance to its thermic effect. 17 references. (Author abstract)

001469 Seeger, Thomas Francis. Yeshiva University **Studies on the specificity and reversal of neuroleptic-induced dopaminergic supersensitivity. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):1737-B, 1980. Ann Arbor, Univ. Microfilms No. 8024034, 153p., 1980.

The ability of chronic clozapine treatment to induce supersensitivity to dopamine agonists was tested in a variety of rat behaviors which are mediated by either the mesolimbic or nigrostriatal dopamine systems. The results were compared to the effects of chronic treatment with haloperidol on these same behaviors. The results indicate that clozapine has a selective action on mesolimbic dopaminergic behaviors. Neuroleptic-induced behavioral supersensitivity to dopamine agonists has been postulated to result from an increase in the total number of postsynaptic receptors, as measured by absolute amounts of stereospecific binding of tritiated ligands. To test this possibility for correlation with previous behavioral results, 3H-spiroperidol binding was measured in groups of rats treated with haloperidol, clozapine,

or saline. Results suggest that behavioral supersensitivity can develop independent of changes in receptor number. Results demonstrate two areas of new information about neuroleptic-induced supersensitivity: neuroleptics with anatomically specific activity patterns induce a corresponding anatomically specific supersensitivity, and neuroleptic-induced supersensitivity can be prevented or reversed by other pharmacologic agents. (Journal abstract modified)

001470 Shalaby, Ismail A.; Spear, Linda Patia. Spear: Dept. of Psychology, SUNY, Binghamton, NY 13901 **Chronic administration of haloperidol during development: later psychopharmacological responses to apomorphine and arecoline.** Pharmacology Biochemistry and Behavior. 13(5):685-690, 1980.

Offspring of pregnant rats injected with 0.25mg/kg of haloperidol or saline throughout gestation and until weaning were psychopharmacologically tested for their responsiveness to arecoline and apomorphine. On postnatal day 50, offspring of such chronic treatments were tested in the open field after administration of 0, 0.05, 0.1, 1.0, or 3.0mg/kg apomorphine, a dopamine agonist. The two chronic treatment groups did not differ in response to high doses of apomorphine which induced stereotyped sniffing and a depression of matrix crossing behavior. However, while control offspring exhibited a low dose suppression of matrix crossing and rearing behavior, haloperidol treated offspring did not, which may indicate a functional hyposensitivity of dopaminergic autoreceptors in these treated animals. When tested at postnatal day 65 for their cataleptic responses to the cholinergic agonist arecoline, haloperidol-treated offspring were more cataleptic to 2mg/kg and 5mg/kg arecoline than control offspring. This suggests that chronic dopamine receptor blockade during development may have long-term indirect effects on the sensitivity of the cholinergic system. 25 references. (Author abstract modified)

001471 Shannak, Kathleen S.; Hornykiewicz, Oleh. Human Brain Laboratory, Clarke Institute of Psychiatry, University of Toronto, Toronto, Canada **Brain monoamines in the rhesus monkey during long-term neuroleptic administration.** Advances in Biochemical Psychopharmacology. 24:315-323, 1980.

The effects of long-term high dose oral administration of chlorpromazine (CPZ) or haloperidol (HAL) on brain dopamine (DA), 5-hydroxytryptamine (5-HT), and norepinephrine (NE) were investigated in rhesus monkeys. The most prominent effects of long-term administration of (up to 17 months) neuroleptics are: 1) widespread elevation of NE levels in the forebrain, including the hypothalamus, thalamus, olfactory area, and nucleus accumbens; 2) a decrease of 5-HT turnover in several limbic forebrain areas; and a mild but consistent increase of homovanillic acid concentration in all DA containing forebrain regions (in the striatum, this effect was found in the CPZ but not the HAL group). Clinical implications of these findings are discussed. 24 references. (Author abstract modified)

001472 Shapiro, Leonie M.; Bowes, Gillian M.; Vaughan, Peter F. T. Dept. of Biochemistry, Glasgow University, Glasgow G12 8QQ, Scotland **Effect of melanostatin and thyroliberin on the biosynthesis and release of dopamine by rat brain striatal P2 fractions.** Life Sciences. 27(22):2099-2108, 1980.

The effect of melanostatin (MIF) and thyroliberin (TRH) on dopamine biosynthesis and release was studied in striatal P2 fractions from rat brain. Dopamine synthesis was not affected by either MIF or TRH in the presence of 2mM ethylene diaminetetra-acetate (EDTA). In contrast, tyramine and ()-amphetamine both stimulated dopamine biosynthesis, in a manner inversely proportional to the rate of dopamine biosynthesis, in the absence of drugs. MIF stimulated the release of dopamine in the presence of calcium chloride but not in the presence of 2mM EDTA. In contrast, ()-amphetamine stimulated release of dopamine under both conditions. These results are discussed in relation to the hypothesis that MIF and TRH stimulate the release of dopamine from vesicular stores by a calcium dependent mechanism, whereas amphetamine stimulates release of dopamine from both vesicular stores and a cytoplasmic pool which regulates tyrosine hydroxylase activity. 35 references. (Author abstract modified)

001473 Shaskan, Edward G.; Lovett, Edmund J., III. Dept. of Psychiatry, University of Connecticut Health Center, School of Medicine, Farmington, CT 06032 **Effects of haloperidol, a dopamine receptor antagonist, on a delayed type hypersensitivity reaction to 1-chloro, -2, 4-dinitrobenzene in mice.** Research Communications in Psychology, Psychiatry and Behavior. 5(3):241-254, 1980.

The effects of subcutaneous injections of haloperidol into C57BL/6 female mice were evaluated on the immune response to a contact allergen (1-chloro,-2,4-dinitrobenzene, DNCB). Evidence from an in vivo cell mediated immune response to DNCB suggests that haloperidol did not alter the immune response through effector mechanisms (efferent arm of response), but rather that it possesses immunomodulatory properties in relation to recognition and processing of de novo antigen (afferent arm of response). These conclusions are made, following deliberate scheduling of drug injections in relation to time of sensitization and challenge by DNCB. While saline vehicle injections alone, or even handling, can depress this immune response, the magnitude and paradoxical effects from haloperidol suggest that dopamine responses are modulating this delayed type hypersensitivity response. The experiments did not distinguish between central (brain) and peripheral (lymphocytes, tissues) sites through which this highly specific dopamine receptor antagonist may be acting. However, baseline levels of immunocompetency appear to dictate magnitudes of response to haloperidol and some dopamine receptor agonists. 26 references. (Author abstract)

001474 Sklenovsky, A.; Chmela, Z. ul. Dr. Allende 3, 775 15 Olomouc, Czechoslovakia **The effects of piracetam on free fatty acids in the brain.** Activitas Nervosa Superior. 22(3):197-198, 1980.

The effects of piracetam upon the increase of nonesterified free fatty acids (NEFA) in an experimental model of increased functional stress to the CNS (painful peripheral stimulation) were investigated in rats. Rats were pretreated with s.c. nootropil (piracetam 250mg/kg) for 3 days with the last dose 90 min before stimulation (electrical foot shocks). Piracetam decreased NEFA enhancement after stimulation in comparison to stimulated but not drug treated control Ss. Implications for clinical use of piracetam are discussed. 4 references.

001475 Skolnick, Phil; Lock, Kwan-Ling; Paul, Steven M.; Marangos, Paul J.; Jones, Rochas; Irmscher, Klaus. Laboratory of Bioorganic Chemistry, NIAMDD, NIH, Bethesda, MD 20205 **Increased benzodiazepine receptor number elicited in vitro by a novel purine, EMD 28422.** European Journal of Pharmacology. 67(2/3):179-186, 1980.

A novel purine, N6-(2-(4-chlorophenyl)-bicyclo-2,2,2,octyl-(3))-adenosine (EMD-28422), increased the number of binding sites for (3H)-diazepam in male Sprague-Dawley rat cortical membranes in vitro without altering receptor affinity. The effect of EMD-28422 suggested that the compound induces a conformational change in the benzodiazepine receptor that may cause the dissociation of an endogenous noncompetitive inhibitor of (3H)-diazepam binding from the membrane, thus unmasking binding sites. The effect of EMD-28422 was antagonized by bi-

cuculline in the stereospecific manner, but was not altered by GABA. This suggests the presence of a novel type or functional state of GABA receptor which may play a permissive role in the rapid modulation of benzodiazepine number in vitro. 27 references. (Author abstract modified)

001476 Slater, P.; Blundell, C. Dept. of Physiology, Medical School, University of Manchester, Manchester M13 9PT, England **Role of brain catecholamines and 5-hydroxytryptamine in morphine induced temperature changes in normal and tolerant rats and mice.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):125-130, 1980.

The effects of morphine on body temperature were studied in normal and morphine tolerant female Sprague-Dawley rats and female albino mice. Results indicate that a single dose of morphine shifts the balance of 5-hydroxytryptamine (5-HT) to dopamine (DA) in the hypothalamus of normal rats in favor of 5-HT. Activation of a 5-HT mechanism apparently causes hyperthermia, whereas DA mediates hypothermia. Rats chronically treated with morphine did not become tolerant to its hyperthermic effects, since morphine tolerance has little effect on 5-HT. Brain DA mechanisms readily developed tolerance to morphine. The hypothermia produced by a single dose of morphine in normal mice was mediated by DA and to a lesser extent by 5-HT. These hypothermic mechanisms rapidly developed tolerance to morphine. Loss of cerebral DA and 5-HT in morphine tolerant mice led to acute morphine hyperthermia caused by an unknown mechanism. 38 references. (Author abstract modified)

001477 Smialowska, M. Polish Academy of Sciences, Krakow, Poland **Effect of quipazine on brain stem monoamine neurons histofluorescence studies.** Journal of Neural Transmission. 45:139-148, 1979.

Using two fluorescence histochemical methods, the effect of 5-hydroxytryptamine receptor stimulation by quipazine (2-(-piperazinyl)quinoline maleate) on monamine fluorescence in the brain stem of rats was studied. It was found that quipazine in a dose of 5mg/kg after 60 minutes decreased noradrenaline fluorescence intensity in noradrenergic neurons of the subcoeruleus area and diminished the density of catecholamine terminals visualized in the central part of the dorsal raphe nucleus. In the principal locus coeruleus, the intensity of fluorescence in nerve cells was not changed using either method, but with one procedure diffuse fluorescence outside cell bodies was observed after quipazine. The results indicate that quipazine, apart from its effect on 5-hydroxytryptamine neurons, may also affect certain noradrenergic neurons. (Author abstract modified)

001478 Smith, G. C. Dept. of Anatomy, Monash University, Melbourne, Australia **A model for psychoneuroendocrine investigation: specific chemical lesioning of the median eminence.** In: Obiols, J., Biological psychiatry today. Vol. A Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 696-698).

Evidence is presented that 6-hydroxydopamine (6-OHDA) given in single intravenous doses of 100mg/kg to 150mg/kg, produces specific degeneration and subsequent regeneration of catecholamine-containing nerve terminals in the median eminence of adult Sprague-Dawley rats. Catecholamine terminals in other brain regions are protected via the blood-brain barrier. Serum luteinizing hormone (LH) levels significantly decreased after 24 hours of treatment and significantly increased after 21 days, at which time regeneration of fibers was well advanced. The results further indicate the involvement of catecholamine-containing terminals of the median eminence in control of LH secretion and suggest that this model system may be useful in studies of psychoneuroendocrine responses. Further chemical manipulation should increase the specificity of the lesion and could help establish factors involved in the prolactin response to stress. 2 references. (Author abstract modified)

001479 Soulairac, A.; Soulairac, M. -L. Centre Hospitalier Sainte-Anne, Universite Rene Descartes, Paris, France **New experimental techniques in the pharmacological evaluation of CNS-acting drugs.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 907-912).

Test procedures for analyzing cerebral tissue responses with respect to two metabolic agents (glucose and CO2) are described. Responses are studied via electroencephalography (EEG or rheoencephalography (REG). Such procedures allow comparisons between young normal Ss and aged Ss who do not display neuropsychiatric disturbances, as well as with some patients with mental impairment. Pretreatment and posttreatment studies allow objective observation of the therapeutic effects of a specific CNS acting drug. Results of animal studies which investigate the effects of strychnine and caffeine and the effects of nootropics (piracetam and UCB 6471) on the central nervous system are summarized; with emphasis on the resistance time and recuperation latency in rats. Observations made in clinical settings, whereby the possible cerebral disturbances were analyzed by studying EEG and REG modifications in Ss by means of two tests (glucose ingestion and carbon dioxide inhalation), are discussed. 5 references.

001480 Spano, P. F.; Memo, M.; Govoni, S.; Trabucchi, M. Institutes of Pharmacology and Pharmacognosy, University of Milano and Cagliari, Milano, Italy **Similarities and dissimilarities between dopamine and neuroleptic receptors: further evidence for type 1 and type 2 dopamine receptors in the CNS.** Advances in Biochemical Psychopharmacology. 24:113-121, 1980.

Studies of similarities and dissimilarities between dopamine and neuroleptic receptors are reviewed and further evidence for type-1 and type-2 dopamine receptors in the CNS is presented. Studies are cited which support the hypothesis that sulpiride labels DA receptor sites possibly not identical to those labeled by classical neuroleptics and associated with adenylyl cyclase activity. The data indicate that characteristics of (3H)(-)sulpiride binding are compatible with the properties of DA receptors are expected from previous pharmacological experiments. It is suggested that (3H)(-)sulpiride preferentially labels a type of DA receptor site different from that preferentially labelled by (3H)haloperidol or (3H)spiroperidol. 24 references.

001481 Spano, P. F.; Memo, M.; Stefanini, E.; Fresia, P.; Trabucchi, M. Institute of Pharmacology and Pharmacognosy, University of Cagliari, I-09100 Cagliari, Italy **Detection of multiple receptors for dopamine.** Advances in Biochemical Psychopharmacology. 21:243-251, 1980.

The detection of multiple receptors for dopamine (DA) in brain by pharmacological, biochemical, and anatomical methods is described. It appears from localization studies that DA receptors associated with DA stimulated adenylyl cyclase are only a part of the receptor total. Binding studies showed that a significant amount of striatal DA receptors are located on terminals of cortical neurons projecting to the neostriatum. Pharmacological studies with sulpiride and its enantiomers strongly support the hypothesis of different subtypes of DA receptors, since sulpiride preferentially labels a type of DA receptor that is different from that preferentially labeled by haloperidol or spiroperidol. 37 references.

001482 Spano, P. F.; Saiani, L.; Memo, M.; Trabucchi, M. Dept. of Neurology and Pharmacology, University of Milan, Milan, Italy **Interaction of dopaminergic ergot derivatives with cyclic nucleotide system.** Advances in Biochemical Psychopharmacology. 23:95-102, 1980.

The interaction of the dopaminergic ergolines bromocriptine and lisuride with cyclic AMP was studied in rat striatum. Both compounds antagonized striatal adenylate cyclase activity in cell-free preparations. However, striatal cyclic AMP content was increased in rats given i.p. injections of bromocriptine or lisuride. The two compounds also stimulated cyclic AMP formation in intact slices of neostriatum. The response to the ergot compounds was decreased by 60 to 70% after unilateral kainic acid lesions of the striatum, while the response to DA was increased to three or fourfold. Results suggest that the dopaminergic ergolines preferentially stimulate cyclic AMP formation in intrinsic striatal neurons. 29 references.

001483 Spissu, A.; Congia, S.; Piccardi, M. P.; Fadda, F.; Mangoni, A.; Gessa, G. L. Gessa: Istituto di Famacologia, Universita di Cagliari, Via Porcell 4, I-09100 Cagliari, Italy **Effects of tiapride on homovanillic acid levels in human cerebrospinal fluid drawn at pneumoencephalography.** Psychopharmacology. 71(1):7-9, 1980.

The effect of tiapride on homovanillic acid (HVA) and 5-hydroxyindoleacetic acid (5-HIAA) levels in the cerebrospinal fluid (CSF) drawn at pneumoencephalography (PEG) was studied. Five consecutive 5 ml fractions of CSF were drawn from control and tiapride -treated Ss. In both groups, a linear increase in HVA concentrations was found between the first and subsequent fractions. On the contrary, no significant difference in 5-HIAA concentrations was found in sequential CSF samples. Tiapride increased the mean HVA concentrations and caused a steeper caudocranial gradient of this metabolite but failed to modify 5-HIAA concentrations. Results suggest that tiapride blocks dopamine (DA) receptors and increases DA synthesis. 29 references. (Author abstract modified)

001484 Squires, Richard F.; Klepner, Claire A.; Benson, Donald I. Rockland Research Institute, Orangeburg, NY 10962 **Multiple benzodiazepine receptor complexes: some benzodiazepine recognition sites are coupled to GABA receptors and ionophores.** Advances in Biochemical Psychopharmacology. 21:285-293, 1980.

Studies of multiple benzodiazepine receptor complexes are reviewed, and types of benzodiazepine receptor complexes are described. It is noted that benzodiazepine receptors differ with respect to associated GABA receptors and ion recognition sites. It appears that one class of benzodiazepine receptors may be associated with either a high affinity or a low affinity, GABA receptor, while another class of benzodiazepine receptors is GABA independent. Further, one class of benzodiazepine receptors is selectively protected against heat inactivation by 50 mM sodium phosphate, pH 7.5, while another class is not. It is concluded that different elements of the receptor complexes almost certainly interact allosterically, and that different benzodiazepine receptor complexes may mediate different pharmacological effects of these drugs. 29 references.

001485 Staunton, David Alan. University of Colorado at Boulder **Supersensitivity and the effects of long-term amphetamine in the rat nigrostriatal system. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1321-B, 1980. Ann Arbor, Univ. Microfilms No. 8021639, 223p, 1979.

Supersensitivity and the effects of long-term d-amphetamine (d-Amp) in the rat nigrostriatal system were investigated. Phenomena consistent with postsynaptic supersensitivity developed in rat neostriatum following the destruction of dopaminergic afferent neurons. There was a gradual increase in the density of 3H-spiroperidol binding sites which developed after the loss of dopamine (DA) containing nerve terminals was completed; a gradual development of DA sensitive adenylate cyclase activity was observed on the side of the lesion relative to the contralateral side, suggesting that receptors labeled by neuroleptic and the DA receptor site linked to adenylate cyclase in the neostriatum may overlap. Intravenous d-Amp usually depressed the firing rate of neostriatal neurons; this reponse was abolished by intravenous haloperidol, suggesting that DA might mediate the effect of d-Amp corpus striatum (CS) neuronal activity. However, when dopaminergic terminals in the CS were destroyed, the depression of neuronal activity by d-Amp was preserved in two cases, suggesting that d-Amp could have a direct action on neostriatal activity following denervation or one mediated by nondopaminergic neurotransmitters. Following either of two regimens of long-term d-Amp administration, there was no change in the density of 3H-spiroperidol binding sites or in the affinity of radioligand for the receptor; however, evidence was obtained that the more rigorous regimen led to the supersensitivity at beta-adrenergic sites. Finally, no alteration in sensitivity of dopaminergic neurons to amphetamine were found under conditions known to enhance drug effects on motor behaviors. (Journal abstract modified)

001486 Steiner, J. A.; Grahame-Smith, D. G. Dept. of Clinical Pharmacology, Royal Free Hospital, Pond St., London NW3 2QG, England **The effect of repeated electroconvulsive shock on corticosterone responses to centrally acting pharmacological stimuli in the male rat.** Psychopharmacology. 71(3):205-212, 1980.

The effects of electroconvulsive shocks (ECS) on corticosterone responses to oxotremorine, 5-hydroxy-L-tryptophan, and clonidine plus alpha-methyl-p-tyrosine were studied in male Sprague-Dawley rats anesthetized with halothane. Results showed that halothane suppressed the effect of the pharmacological stimuli on plasma corticosterone concentrations. Repeated ECS reversed the effect of the anesthetic procedure, but produced no reversible enhancement of its own. 23 references. (Author abstract modified)

001487 Steiner, J. A; Grahame-Smith, D. G. Dept. of Clinical Pharmacology, Royal Free Hospital, Pond St., London NW3 2QG, England **Central pharmacological control of corticosterone secretion in the intact rat. Demonstration of cholinergic and serotoninergic facilitatory and alpha-adrenergic inhibitory mechanisms.** Psychopharmacology. 71(3):213-217, 1980.

Cholinergic, serotonergic, and alpha-adrenergic influences on corticosterone secretion were demonstrated in male Sprague-Dawley rats. Oxotremorine and 5-hydroxy-L-tryptophan (5-HTP) raised plasma corticosterone levels in a dose-related fashion, and these effects were blocked by atropine and mianserin, respectively. Alpha-methylparatyrosine methyl ester induced an increase in plasma corticosterone levels that could be suppressed by clonidine; the clonidine suppression could be antagonized in turn by piperoxane. Apomorphine did not lower plasma corticosterone levels in rats pretreated with alpha-methylparatyrosine. 25 referencs. (Author abstract modified)

001488 Sternberg, Debra B.; Gold, Paul E. Gold: Dept. of Psychology, Gilmer Hall, University of Virginia, Charlottesville, VA 22901 **Retrograde amnesia produced by electrical stimulation of the amygdala: attenuation with adrenergic antagonists. (Unpublished paper).** Research Report, NIMH Grant 5R01-MH-31141, 1980. 17 p.

Subseizure electrical stimulation of the amygdala produced retrograde amnesia for a visual discrimination shock-motivated task. Animals pretreated with the alpha-adrenergic antagonist, phenoxybenzamine, or the beta-adrenergic antagonist, propranolol, did not develop amnesia. The findings indicate that adrenergic antagonists attenuate amnesia produced by amygdala stimulation for visual discrimination training. These results are con-

sistent with previous evidence indicating that adrenergic antagonists attenuate the amnesias produced by a variety of agents and, thus, suggest that adrenergic mechanisms may be involved in the production of retrograde amnesia. 36 references. (Author abstract)

001489 Stewart, Donald. no address **Turning on the endorphins.** American Pharmacy. NS20(10):50-54, 1980.

Recent research on endorphins and their ability to induce analgesia is reviewed. Experiments at the National Institute of Mental Health have utilized acupuncture in rats to release brain endorphins. Rat brains were found to have significant endorphin depletions in three areas and concomitant increases were found in the central nervous system. Other experiments examining the endorphin role in placebo analgesia are summarized. The role of naloxone as an opiate antagonist is also discussed. 11 references.

001490 Stock, G.; Kummer, P.; Steinbrenner, J. Institute of Physiology I, University of Heidelberg, D-6900 Heidelberg, West Germany **Long-term application of haloperidol: effect of anticholinergic treatment on the rate of dopamine synthesis.** Advances in Biochemical Psychopharmacology. 24:291-294, 1980.

The effects of antiacetylcholine (ACh) on dopamine (DA) turnover were compared in animals on acute or long-term haloperidol treatment. Results obtained by measuring the accumulation of dihydroxyphenylalanine (DOPA) in neostriatum and nucleus accumbens after long-term treatment with haloperidol reveal alterations in the rate of DA synthesis which have been observed earlier using different techniques. The effect of a single injection of haloperidol on the DOPA accumulation within the neostriatum and nucleus accumbens was significantly reduced if bentropine or atropine was administered a few seconds before the administration of haloperidol. 10 references.

001491 Su, Tsung-ping; Sharpe, Lawrence G. NIDA, Division of Research, Addiction Research Center, Lexington, KY 40583 **Characteristics of oscillatory contractions elicited by naloxone in ileum preparation from morphine-dependent guinea pigs.** Communications in Psychopharmacology. 4(3):189-195, 1980.

Longitudinal muscle/myenteric plexus preparations from morphine dependent guinea-pigs were equilibrated in the presence of normorphine (200nM). Naloxone (100nM) produced a spontaneous transient contracture followed by a long lasting oscillatory contraction. The tension of the transient contracture, but not that of the oscillatory contraction, was greater in ilea from guinea-pigs dependent on morphine for 6 days than in those dependent for 3 days. Sensitivity to acetylcholine was enhanced by 6 days of dependence, but not by 3 days. The naloxone sensitive transient contracture appeared to be due to increased ACh release from myenteric neurons and enhanced postsynaptic sensitivity to ACh. It is concluded that the two types of contractions represent separate signs of naloxone precipitated abstinence which may parallel the tonic and phasic behavioral symptoms of opiate withdrawal. 19 references. (Author abstract modified)

001492 Sugrue, Michael F. Centre de Recherche Merrell International, 16, rue d'Ankara, F-67084 Strasbourg-Cedex, France **The inability of chronic mianserin to block central alpha2-adrenoceptors.** European Journal of Pharmacology. 68(3):377-380, 1980.

The effect of mianserin (10mg/kg/day for 1, 5, 9, or 15 days) on the clonidine-induced decrease in brain levels of 3-methoxy-4-hydroxyphenylglycol sulfate (MHPG-SO4) was studied in male Sprague-Dawley rats. The clonidine-induced reduction in brain MHPG-SO4 was blocked by treatment with mianserin for 1 or 5 days, but was not altered after 9 or 15 days of mianserin treatment. Chronic mianserin administration was associated with elevated MHPG-SO4 levels. Results suggest that mianserin loses its ability to block central alpha2-adrenoceptors (presumably through the development of alpha2-adrenoceptor supersensitivity) but may continue to block alpha1-adrenoceptors. 15 references. (Author abstract modified)

001493 Sulser, F.; Mishra, R.; Mobley, P. L. Vanderbilt University School of Medicine, Nashville, TN 37217 **Functional aspects of the norepinephrine (NE) receptor coupled adenylate cyclase system in the central nervous system.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 100-105).

A series of studies on the characterization of the norepinephrine (NE) receptor coupled adenylate cyclase system in the rat limbic forebrain and on the modification of this system by drugs which can either precipitate or alleviate depressive reactions in man is described. Topics discussed include: characterization of the NE cyclic AMP generating system in slices of the limbic forebrain as a functional postsynaptic NE receptor system; functional modification of the limbic NE receptor coupled adenylate cyclase system; and functional significance of sensitivity changes of the NE receptor coupled adenylate cyclase system in brain. 30 references.

001494 Svejnohova, D.; Janousek, I.; Suva, J. Dept. of Pharmacology, Karlovarska 48, 301 67 Plzen, Czechoslovakia **Study of lithium levels in the serum and genital organs of male rats.** Activitas Nervosa Superior. 22(3):178-180, 1980.

The distribution of lithium in the genital organs and serum of male rats following a single 1mmol Li/kg injection was investigated. The maximum serum Li concentration was found 1 hour after injecting LiCl; in 4 hr it fell to half the initial value and in 12 hr to less than one quarter. The highest Li concentrations in genital organs were found 4 hr after injection, and in the order prostate greater than epididymis greater than seminal vesicle greater than testis. The values determined at 12 hr showed that the Li level in genital organs was still high. 2 references.

001495 Svorad, D. Institute of Normal and Pathological Physiology, Sienkiewiczova 1, 884 23 Bratislava, Czechoslovakia **Functional organization of the caudate nucleus after administration of carbachol.** Activitas Nervosa Superior. 22(3):211-213, 1980.

The functional organization of the caudate nucleus after administration of carbachol was investigated in chronically prepared male rats. Carbachol was applied to the caudate nucleus through a double barrelled cannula. Single unit activity in the caudate nucleus was recorded for 4 hours following carbachol application. Results suggest that cholinergic stimulation changes activity organization of the caudate nucleus. 4 references.

001496 Swann, Alan C.; Heninger, George R.; Marini, James L.; Sheard, Michael H.; Maas, James W. Dept. of Psychiatry, Yale University School of Medicine, 333 Cedar St., New Haven, CT 06510 **Lithium effects on high-affinity tryptophan uptake: evidence against a stabilization mechanism.** Brain Research. 194(1):287-292, 1980.

The acute effects of lysergic acid diethylamide (LSD) and chlorimipramine on tryptophan uptake into brain synaptosomes were studied in male Sprague-Dawley rats treated chronically with dietary lithium. The acute drug treatments did not alter tryptophan uptake in control animals, but in lithium treated animals, the maximum velocity of tryptophan uptake was increased by chlorimipramine and decreased by LSD. Results indicate that, rather than stabilizing serotonin production through tryptophan uptake changes, chronic lithium treatment may increase

the responsiveness of tryptophan uptake to changes in serotonin utilization. 38 references. (Author abstract modified)

001497 Sweet, William H. One Longfellow Place, Suite 201, Boston, MA 02114 **Neuropeptides and monoaminergic neurotransmitters: their relation to pain.** Journal of the Royal Society of Medicine. 73(7):482-491, 1980.

The relationship between neuropeptides and pain is investigated. The mechanisms of action for enkephalins, beta-endorphin, substance P, somatostatin, neurotensin, angiotensin II, and cholecystokinin are examined. Treatment of pain is complicated by the fact that the functions of these neuropeptides may overlap. Furthermore, these substances are not necessarily brought into action by identical means nor do they have necessarily identical mechanisms of action. Thus, when a system is affected in a desired direction, there are several mechanisms which may move toward restoration of the status quo ante and thwart the therapy. Such mechanisms probably are responsible for the tachyphylaxis to medications and the reappearance of algesia and clinical pain which tend to follow initially successful neurosurgical procedures. What is required is to introduce to the proper site in the brain that neuropeptide or other neurotransmitter which must depend for its effect not only on its chemical nature but also on the precise anatomical substrate upon which it acts. 108 references.

001498 Switzer, Robert C., III. 17 10th Avenue, Brunswick, MD 21716 **Toxicity of oxygen in iron-rich areas of rat brain. (Unpublished paper).** Poolesville, MD, NIMH, 1980. 1 p.

Female rats were exposed to oxygen at high pressure (OHP) at 57psi for 50min daily for 1 to 5 days and sacrificed 2 days after their last exposure in a study of the toxicity of oxygen in iron rich areas of brain. There was convincing evidence that the damage of OHP is due to the production of lipid membrane damaging free radicals. Since the free radicals superoxide, peroxide, and hydroxyl are readily generated by an iron oxygen interaction, it is not surprising that the iron rich areas would be susceptible to damage under these conditions. However, it is surprising that the areas with the highest amount of iron, globus pallidus and n. reticulata of substantia nigra, are not the first to be damaged. An explanation is provided by the metabolic activity maps using 2-deoxyglucose. Inferior colliculus and other auditory nuclei with a moderate amount of iron, have the highest metabolic activity while pallidum and nigra exhibit a lower metabolic rate. Other areas of high metabolism but without demonstrable iron did not show damage. It is concluded that susceptibility of brain structures to damage by OHP is a function of the iron levels of a given region and its metabolic rate. (Author abstract modified)

001499 Syapin, Peter J.; Stefanovich, Vladisav; Mandel, Paul; Noble, Ernest P. Grant Neuroscience Lab., Dept. of Neurology, UCLA, School of Medicine, 2025 Zonal Avenue, Los Angeles, CA 90033 **Stimulation of the plasma membrane enzyme, 5'-nucleotidase, by ethanol exposure to neural cells in culture.** Progress in Neuro-Psychopharmacology. 4(1):19-30, 1980.

Neural cells grown in culture were employed to investigate the interaction between exposure to ethanol and enzyme activity at the plasma membrane of intact cells. Continuous exposure of rat glioma cells (line c6) to ethanol induced a rise in the ecto-5'-nucleotidase enzyme activity. This activity appeared cell density dependent and was reversible upon ethanol withdrawal. Acute exposure to ethanol was also found to cause a dose dependent stimulation in enzyme activity. The stimulation of enzyme activity after chronic ethanol exposure was not a direct consequence of the acute presence of ethanol, but appeared as an adaptation to the acute effect. Tolerance to the acute stimulation by ethanol was observed in cells chronically treated with ethanol. A possible mechanism involving a change in membrane fluidity is proposed which will accommodate the data obtained from both acute and chronic studies. Neural cells in culture were found to react to the presence of ethanol in their media in a manner similar to animals and appear useful for delineating plasma membrane effects of ethanol without damage to cellular integrity. 42 references. (Author abstract modified)

001500 Sze, Paul Y. Dept. of Biobehavioral Sciences, U-154, University of Connecticut, Storrs, CT 06268 **Glucocorticoids as a regulatory factor for brain tryptophan hydroxylase during development.** Developmental Neuroscience. 3(4-6):217-223, 1980.

Chronic administration of corticosterone (5mg/kg) to developing rats was found to induce an increase of tryptophan hydroxylase (TPH) activity in midbrain, but the responsivity of the enzyme to the steroid appeared to be limited only to a brief neonatal period (days 6 to 12). Reserpine (5mg/kg) induced an increase in midbrain TPH activity also only after 5 days of postnatal life, but the responsivity of the enzyme to reserpine continued after day 12 and throughout adulthood. Thus, the effect of the glucocorticoid and that of reserpine on TPH may involve different mechanisms. Although corticosterone showed no apparent inductive effect after day 12, developmental rise of midbrain TPH activity after day 12 was found to be totally abolished by bilateral adrenalectomy. Replacement with corticosterone to the adrenalectomized rats restored normal enzyme development. It appears that glucocorticoids are involved in a permissive role in the developmental rise of TPH activity in midbrain. 27 references. (Author abstract)

001501 Szereda-Przestaszewska, Malgorzata. Dept. of Neurophysiology, Polish Academy of Sciences Medical Research Centre, Dworkowa 3, 00-784 Warsaw, Poland **Laryngeal effects of serotonin in rabbits.** Acta Neurobiologiae Experimentalis. 39(4):241-248, 1979.

Changes in laryngeal resistance to airflow were measured in rabbits during spontaneous breathing, while larynx was isolated in situ. Intravenous injections of serotonin resulted in variable apnea followed by rapid, shallow breathing, coupled with increases in laryngeal inspiratory and expiratory resistances. These laryngeal responses persisted after cutting vagi in the chest. The central actions of serotonin seem to be responsible for stimulatory laryngeal effects. 31 references (Author abstract)

001502 Tallman, John F.; Gallager, Dorothy W.; Mallorga, Pierre; Thomas, John W.; Strittmatter, Warren; Hirata, Fusao; Axelrod, Julius. Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Studies on benzodiazepine receptors.** Advances in Biochemical Psychopharmacology. 21:277-283, 1980.

Electrophysiological and pharmacological studies of benzodiazepine receptors and of the mechanisms of action of benzodiazepine effects are reviewed. Topics discussed include: GABA/benzodiazepine interactions; benzodiazepine/chloride interactions; benzodiazepine/diphenylhydantoin interaction; benzodiazepine/phospholipid interactions; soluble benzodiazepine binding site; and benzodiazepine analogs, derivatives, and irreversible ligands. It is concluded that the environment of the benzodiazepine binding site is quite complex and, at least in some area of the brain, diazepam interacts with GABA receptors to open a chloride ionophore. 19 references.

001503 Tallman, John F.; Mallorga, Pierre; Thomas, John W.; Gallager, Dorothy W. Section on Biochemistry and Pharmacology, Biological Psychiatry Branch, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Characterization of benzodiazepine binding sites. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 12 p.

Recent investigations into the nature of change in benzodiazepine binding elicited by pharmacological agents and the issue of multiple receptors are reviewed. Also, some new data concerning the properties of the soluble receptor are discussed. A number of conclusions may be drawn from the review of the research: 1) the interdependence of GABA receptors and the central benzodiazepine binding sites is crucial in the function of both systems -- affinity changes may determine the ability of the system to function; 2) alterations in the number of sites may also be of great importance in determining the magnitude or set point of response of the GABA system; 3) central benzodiazepine binding sites differ from peripheral sites and are probably genetically distinct from them; 4) at least in the membrane, central benzodiazepine binding sites may not all be normally exposed; and 5) from the covalent labeling experiments with (3H)flunitrazepam and the simultaneous experiment with nonradioactive flunitrazepam, the binding sites for benzodiazepines, at least in the membrane, can probably interact with each other as well as with GABA receptors -- this may indicate a complex of several benzodiazepine sites together in the membrane. 46 references.

001504 Tallman, John F.; Mallorga, Pierre; Thomas, John W.; Gallager, Dorothy W. Section of Biochemistry and Pharmacology, Biological Psychiatry Branch, NIMH, Bldg. 10, 2N315, Bethesda, MD 20205 **Benzodiazepine binding sites: properties and modulation. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 10 p.

Recent investigations into the nature of changes in benzodiazepine binding elicited by pharmacological agents and the issue of multiple receptors are reviewed. A number of conclusions may be drawn from the discussion. GABA receptors and the central benzodiazepine binding closely interact in the membrane, and affinity changes may determine the ability of the system to function. Alterations in the number of benzodiazepine sites may also be of great importance in determining the magnitude of the GABA response or set point of response of the GABA system. Central benzodiazepine binding sites differ from peripheral sites and there may be several central sites. At least in the membrane central benzodiazepine binding sites may not all be normally exposed. From the covalent labeling experiments with (3H)flunitrazepam, the binding sites for benzodiazepines, at least in the membrane, can probably interact with each other as well as with GABA receptors. This may indicate a complex of several benzodiazepine sites together in the membrane with a GABA recognition unit and an ion channel. 48 references.

001505 Tasaki, I.; Iwasa, K.; Gibbons, R. Laboratory of Neurobiology, NIMH, Bldg. 36, 1D-02, Bethesda, MD 20205 **Mechanical changes in crab nerve fibers during action potentials. (Unpublished paper).** Bethesda, MD, NIMH, 1980 18 p.

A nerve impulse travelling along a crustacean (crab) nerve was found to be accompanied by a small, rapid movement of the nerve surface. The movement was 10 to 20nm in amplitude and was concurrent with a rise in the swelling pressure of the order of 5mg/cm2 for a nerve bundle. Initiation of an action potential at the site of cathodal polarization was preceded by a small, slow mechanical change in the nerve fiber. Anodal polarization produced a large mechanical change of the opposite sign. Tetrodotoxin and procaine suppressed mechanical changes associated with action potentials. 13 references. (Author abstract)

001506 Tateishi, Noriaki. Dept. of Neuropsychiatry, School of Medicine, Nagasaki University, Nagasaki-ken, Japan **Biochemical study of the animal model depression induced by tetrabenazine.** Psychiatria et Neurologia Japonica. 82(4):216-233, 1980.

The cessation of activity induced in a male Wister rat by tetrabenazine (TBZ) as an animal model of depression was studied from a biochemical point of view. The relationship between the behavioral and metabolic effects of TBZ was examined by quantitative measurements of cerebral amines, brain and plasma levels of amine precursors, liver transaminase activity, and the level of pituitary adrenal cortex hormone. The results show that the cessation of activity is related to the acceleration of 5-hydroxytryptamine (5HT) metabolism rather than to the cerebral and plasma levels of TBZ itself. It is also found that the behavioral change is not due to the decrease in cerebral 5HT content but rather to the release of excessive 5HT in the crevices of synapsis. It is suggested that in some depressed patients 5HT receptor sensitivity is accelerated. 66 references.

001507 Tazi, A.; Galteau, M. M.; Siest, G. Lab. de Biochimie Pharmacologique, ERA CNRS 698, 7, Rue Albert Lebrun, F-54000 Nancy, France **Effect of imipramine on hepatic gamma-glutamyltransferase in female rats. Interaction with contraceptives.** Biochemical Pharmacology. 29(20):2874-2876, 1980.

To clarify the role of plasma membrane alterations during increased gamma-glutamyltransferase (GGT) following drug ingestion, the effects of imipramine and steroid contaceptives on GGT and cytochrome P-450 levels in liver and plasma of female rats were investigated. Imipramine modified the subcellular distribution of GGT in rat liver, resulting in the release of the enzyme from plasma membranes to cytosol and in the increase of its activity in the plasma. The increase of GGT levels following steroid contraceptives (Mestranol/Norethynodrel mixture) is compatible with an inducing effect. Results are discussed in relation to clinical reported neurological problems among women taking both drugs. 21 references. (Author abstract modified)

001508 Timmermans, P. B. M. W. M.; Karamat Ali, F.; Kossen, S. P.; van Zwieten, P. A. Dept. of Pharmacy, University of Amsterdam, Plantage Muidergracht 24, NL-1018 TV Amsterdam, The Netherlands **Negligible affinity of histamine H2-receptor antagonists for central alpha1-adrenoceptors.** Journal of Pharmacy and Pharmacology. 32(2):147, 1980.

The binding of 3H-prazosin to alpha1-adrenoceptors in male Wistar rat brain was only weakly displaced by the histamine H2-receptor antagonists metiamide and cimetidine. The histamine H1-receptor antagonist diphenhydramine was more active, and clonidine was relatively potent. Results do not support the hypothesis that clonidine initiates its central hypotensive effect via histamine H2-receptors. 6 references.

001509 Titeler, M.; List, S.; Seeman, P. Dept. of Pharmacology, Faculty of Medicine, University of Toronto, Toronto, Canada, M5S 1A8 **High affinity dopamine receptors (D3) in rat brain.** Communications in Psychopharmacology. 3(6):411-420, 1979.

The binding of 3H-dopamine and 3H-apomorphine to rat and calf striatum was investigated. Dissociation constant values for both ligands to both preparations were 2 to 3nM. Dopamine, apomorphine, N-propyl-norapomorphine, and 2-amino-6,7-dihydroxy-1,2,3,4-tetrahydronaphthalene inhibited the binding of both ligands at low concentrations (1.5 to 7nM), whereas neuroleptics inhibited binding at high concentrations (100 to 2000nM). Sites with high affinity for 3H-dopamine and 3H-apomorphine were saturable, heat labile, and found only in dopamine rich brain regions. They differ from sites labeled by 3H-neuroleptics and 3H-dihydroergocryptine and from low affinity sites labeled by 3H-apomorphine. 35 references. (Author abstract modified)

001510 Titeler, Milt; Seeman, Philip. Dept. of Pharmacology, University of Toronto, Toronto, Ontario, Canada M5S 1A8

Ergot and catecholamine potencies at catecholamine receptors. Advances in Biochemical Psychopharmacology. 23:35-40, 1980.

The binding of tritiated ligands to catecholamine receptors is reviewed. The data indicate that haloperidol, spiperone, dihydroergocriptine, and bromocriptine bind to the postsynaptic dopamine receptor, whereas dopamine, apomorphine, and 2-amino-6,7-dihydroxy-1,2,3,4-tetrahydronaphthalene bind to a presynaptic dopamine receptor. Present evidence suggests that 3H-clonidine binds to the adrenergic autoreceptor, while 3H-WB-4101 binds to the postsynaptic alpha-adrenergic receptor. 21 references.

001511 Titeler, Milt; Seeman, Philip. Dept. of Pharmacology, University of Toronto, Toronto, Canada M5S 1A8 **Radioreceptor labeling of pre- and postsynaptic dopamine receptors.** Advances in Biochemical Psychopharmacology. 24:159-165, 1980.

Data from pharmacological analysis, lesion studies, neuroanatomical location, and postmortem levels in parkinsonian brain are cited which support the hypothesis that the 3H-haloperidol binding sites are the postsynaptic dopamine receptors, and that the 3H-dopamine binding site is the presynaptic dopamine autoreceptor. It is noted that two binding sites have been detected in the mammalian caudate and in other areas known to be dopaminergically innervated; one of these sites displays high affinities for phenothiazines, butyrophenones, thioxanthenes, and certain ergot derivatives, the other sites display high affinities for catecholamines. 23 references.

001512 Trabucchi, M.; Memo, M.; Battaini, F.; Reggiani, A.; Spano, P. F. Dept. of Pharmacology, University of Brescia, Brescia, Italy **Effect of long-term treatment with haloperidol and sulpiride on different types of dopaminergic receptors.** Advances in Biochemical Psychopharmacology. 24:275-281, 1980.

The effects of long-term treatment with haloperidol and sulpiride on different types of dopaminergic receptors in striatum and pituitary were investigated. Results provide further biochemical support for the hypothesis indicating the existence of different types of dopaminergic receptors in the CNS. Rats chronically treated with haloperidol display a significant increase of 3H-spiroperidol specific binding at striatal levels. Implications for avoiding neuroleptic-induced tardive dyskinesia are discussed. 37 references.

001513 Tripathi, Hem L.; Vocci, Frank J.; Dewey, William L. Dewey: Dept. of Pharmacology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298 **Effect of antinociceptive doses of oxotremorine on mouse brain acetylcholine turnover rate.** Life Sciences. 27(22):2055-2062, 1980.

The effect of antinociceptive doses of oxotremorine on the steady-state level of turnover rate of acetylcholine (ACh) was investigated in male Swiss-Webster mice. Oxotremorine produced significant dose-related increase in ACh levels. The increased steady-state level of ACh was temporarily correlated with the peak antinociceptive effect of oxotremorine. ACh turnover rate decreased with increasing doses of oxotremorine. The decrease in turnover rate of ACh produced by antinociceptive doses of oxotremorine was found to be of a lesser magnitude than that produced by tremorogenic doses. 18 references. (Author abstract modified)

001514 Tsyrlin, Vitaliy A.; Bravkov, Michail F. Div. of Pharmacology, Central Scientific Research Lab., I.P. Pavlov 1st Medical Institute, 197089 Leningrad, USSR **Effects of alpha-adrenoceptor-stimulating drugs on baroreceptor reflexes in conscious cats.** European Journal of Pharmacology. 67(1):75-83, 1980.

The effects of central alpha-adrenoceptor stimulants (clonidine, reserpine, and alpha-methyldopa) on baroreceptor reflexes was studied in conscious cats. The drugs exerted a sedative effect associated with bradycardia and increased baroreceptor reflexes. Clonidine and reserpine lowered blood pressure, but alpha-methyldopa increased it. Confrontation with a dog and electrical hypothalamic stimulation produced hypertensive reactions and diminished baroreflexes. All these drugs reduced the responses to natural stress, but clonidine and alpha-methyldopa failed to alter the decrease in baroreceptor reflexes induced by electrical stimulation of the hypothalamus. 31 references. (Author abstract modified)

001515 Turski, Lechoslaw; Kleinrok, Zdzislaw. Dept. of Pharmacology, Institute of Clinical Pathology, Medical School, Jaczewskiego 8, PL 20-090 Lublin, Poland **Effects of kainic acid on body temperature of rats: role of catecholaminergic and serotonergic systems.** Psychopharmacology. 71(1):35-39, 1980.

The effects of kainic acid (KA) on body temperatures of rats were investigated and the role of catecholaminergic and serotonergic systems in body temperature regulation is discussed. Intraventricular (i.v.) administration of doses of KA caused diphasic effects on the body temperature of rats; initially hypothermia, rapidly followed by hyperthermia. Pretreatment of rats with 6-hydroxydopamine effectively blocked the hypothermic and significantly increased the hyperthermic effects of KA. The hyperthermic effect of KA was reversed in the 5,6-dihydroxytryptamine creatine sulfate and dorsal raphe lesioned rats. However, the electrolytic lesion of the medial raphe nucleus did not cause any changes in the thermic activity of KA. The thermic effects of KA injected i.v. appear to be dependent on the balance between serotonergic and catecholaminergic influences on central thermoregulation. 18 references. (Author abstract modified)

001516 U'Prichard, David C. Dept. of Pharmacology, Northwestern University School of Medicine, Chicago, IL 60611 **Multiple CNS receptor interactions of ergot alkaloids: affinity and intrinsic activity analysis in in vitro binding systems.** Advances in Biochemical Psychopharmacology. 23:103-115, 1980.

The interaction of ergot alkaloids with monoaminergic receptor systems is reviewed. Data from in vitro studies indicate that ergot alkaloids interact with high affinity at six or more different receptors in the brain. The effects of dihydrogenation and other substitutions on the potencies of ergots at various receptors and on their intrinsic activities are discussed. 57 references.

001517 Uzan, A.; Kabouche, Marie; Rataud, J.; Le Fur, G. Pharmindustrie, Groupe Pharmuka, 35, quai du Moulin de Cage, F-92231 Gennevilliers, France **Pharmacological evidence of a possible tryptaminergic regulation of opiate receptors by using indalpine, a selective 5-HT uptake inhibitor.** Neuropharmacology. 19(11):1075-1079, 1980.

Indalpine, a selective inhibitor of serotonin uptake, showed analgesic properties in the hot plate test in male CD1 mice and enhanced the analgesic effects of morphine and pethidine. The drug also antagonized the development of tolerance to morphine, but did not appear to alter morphine pharmacokinetics. Pretreatment of male Sprague-Dawley rats with indalpine in vivo had no effect on opiate receptor binding sites, but enhanced the potency of morphine in competing for (3H)-naloxone, (3H)-met-enkephalin, and (3H)-leu-enkephalin binding sites. Indalpine also sensitized the agonist state of opiate receptor binding sites to enkephalin without changing the antagonist state. The effect of indalpine was antagonized by the serotonin synthesis inhibitor p-chlorophenylalanine. Indalpine antagonized the depletion of opioid peptides by cyclophosphamide. Results

suggest a tryptaminergic regulation of opiate receptors. 17 references. (Author abstract modified)

001518 Valentino, Rita Jean. University of Michigan **Narcotic antagonist-precipitated abstinence: relationship to dissertation).** Dissertation Abstracts International. 41(5):1738-B, 1980. Ann Arbor, Univ. Microfilms No. 8025790, 186p., 1980.

A study to determine whether actions other than antagonism of narcotics are involved in the precipitation of narcotic abstinence by narcotic antagonists and how the pharmacology of the benzazocines is involved in mechanisms of narcotic abstinence is reported. The benzazocine compounds, like narcotic antagonists, produce a contraction of ilea isolated from normal guinea pigs by a mechanism due to acetylcholine release. Studies suggest that the benzazocines and narcotic antagonists produce a sign indicative of abstinence in vitro by interacting with different sites. The benzazocines when administered to normal rhesus monkeys produce signs resembling those which are observed during narcotic abstinence in morphine dependent monkeys. Results suggest that the precipitation of abstinence by narcotic antagonists involves primarily the antagonist action of these compounds and that the benzazocines which mimic abstinence in naive rhesus monkeys may do so by activating cholinergic pathways which are active in the expression of this syndrome. (Journal abstract modified)

001519 Vandenburgh, Herman; Kaufman, Seymour. Laboratory of Neurochemistry, NIMH, Bethesda, MD 20205 **Short and long-term modification of skeletal muscle sodium pump activity and muscle protein turnover. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 14 p.

A method of passively stretching tissue cultured skeletal muscle cells, which was developed to study the coupling between passive stretch and skeletal muscle protein turnover, is detailed, and the results are discussed in terms of: 1) passive muscle stretch and sodium (Na) pump activity; and 2) long-term modification of Na pump activity. Tabular data are presented on: compensatory skeletal muscle hypertrophy of the rat soleus in vivo tenotomy model; processes involving muscle stretch (denervation hypertrophy, compensatory hypertrophy, early muscle growth, and Feng effect); biochemical changes in skeletal myotubes when passively stretched 10% (amino acid transport, total protein synthesis, myosin heavy chain synthesis, and protein degradation); long-term effect of ouabain on Na pump activity and protein synthesis in skeletal myotubes; and effect of medium composition on ouabain-induced changes in 86Rb uptake by skeletal myotubes. The experiments indicate that muscle cells can adapt their Na pump activity to compensate for changes by ouabain and are able to return their pumping activity to its original control level. This response of the cells to ouabain may be of some regulatory importance. 49 references.

001520 Vekaler, I. G.; Ryabukha, V. N.; Balitskiy, K. P.; Al't-shuler, R. A.; Mashkovskiy, M. D. Inst. problem onkologii im. R. Ye. Kavetskogo AN Ukrainskoy SSR, Kiev, USSR /**The immunostimulant antineoplastic action of some psychotropic drugs of the sydnonimine series.**/ Ob immunostimuliruyushchem i protivoopukholevom deystvii nekotorykh psikhotropnykh preparatov sidnoniminovogo ryada. Farmakologiya i Toksikologiya. 43(3):349-352, 1980.

The immunostimulant antineoplastic action of some psychotropic drugs of the sydnonimine series was studied in white mice, white rats, and rabbits. Aqueous solutions of sydnophen were injected in a dose of 25 milligrams per kilogram at one time, or in doses of 5 to 10 milligrams per kilogram during 5 to 10 days. A suspension of sydnocarb was injected in doses of 15 to 25 milligrams per kilogram also in the course of 5 to 10 days. Results show that in healthy animals and in those with different experimental tumors, the psychostimulant drug sydnophen activates the immune reactions. It increases the number of RFC, the intensity of delayed hypersensitivity, the blast transformation of lymphocytes, and the QD coefficient. This activation is accompanied by a slight inhibition of transplanted tumors. The psychostimulant sydnocarb exerts no immunostimulant action or any effect on the growth of experimental tumors. 13 references. (Journal abstract modified)

001521 Vincent, Jean-Pierre; Vignon, Jacques; Kartalovski, Branko; Lazdunski, Michel. Lazdunski: Centre de Biochimie du CNRS, Universite de Nice, Parc Valrose, F-06034 Nice Cedex, France **Compared properties of central and peripheral binding sites for phencyclidine.** European Journal of Pharmacology. 68(1):79-82, 1980.

Specific, reversible binding of phencyclidine and its derivatives was demonstrated in male Sprague-Dawley rat brain and peripheral organs. Binding characteristics differed in brain, lung, heart, kidney, and liver. The pharmacological potencies of the phencyclidines in the rotarod test were correlated with the compounds' affinities for brain receptors, but not for peripheral receptors. 8 references. (Author abstract modified).

001522 Waddington, John L. Division of Psychiatry, MRC Clinical Research Centre, Watford Road, Harrow, Middlesex HA1 3UJ, England **Effects of nomifensine and desipramine on the sequelae of intracerebrally-injected 6-OHDA and 5,6-DHT.** Pharmacology Biochemistry and Behavior. 13(6):915-917, 1980.

Pretreatment with either nomifensine or desipramine (15mg/kg) was found to attenuate the depletion of forebrain noradrenaline induced by unilateral 6-hydroxydopamine (6-OHDA) lesions of the medial forebrain bundle. Neither pretreatment influenced the depletions of striatal dopamine induced by medial forebrain bundle lesions with 6-OHDA or 5,6-dihydroxytryptamine, or contralateral rotation responses to apomorphine in the 6-OHDA lesioned animals. Pretreatment with nomifensine attenuated the depletion of striatal dopamine induced by intrastriatal injections of 6-OHDA, consistent with inhibition of dopamine uptake in vivo. It is suggested that nomifensine may differentially influence distinct axonal and terminal uptake mechanisms for dopamine. 9 references. (Author abstract modified)

001523 Wang, Rex Y.; Aghajanian, George K. Dept. of Pharmacology, St. Louis University School of Medicine, 1402 S. Grand Blvd., St. Louis, MO 63104 **Enhanced sensitivity of amygdaloid neurons to serotonin and norepinephrine after chronic antidepressant treatment.** Communications in Psychopharmacology. 4(1):83-90, 1980.

The response of amygdaloid (AMYG) neurons to serotonin (5-HT), LSD, and norepinephrine (NE) after chronic antidepressant treatment was investigated in rats. After 2 weeks of treatment, AMYG neurons were more sensitive to all three substances and were also more sensitive to endogenous 5-HT released by stimulation of the ascending 5-HT pathway near the dorsal raphe nucleus. In contrast, 2 weeks of treatment with a tricyclin antipsychotic drug or with a selective 5-HT uptake blocker failed to alter the responsiveness of AMYG neurons to 5-HT or NE. It is suggested that modulation of the sensitivity of postsynaptic 5-HT and NE receptors may be related to the delayed therapeutic actions of tricyclic antidepressant drugs. 29 references. (Author abstract modified)

001524 Waniewski, Robert Anthony. George Washington University **A study of a glial gamma-aminobutyric acid system: its regulation, function and the effects of diazepam. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):1738-B, 1980. Ann Arbor, Univ. Microfilms No. 8023871, 196p., 1980.

The properties of glial GABA and its relationship to synaptic transmission were examined and the effect of diazepam on glial GABA was investigated. The pineal gland and superior cervical ganglion of the rat were used as a model system since their GABA content is exclusively glial in origin. It was found that glia possess the capacity to accumulate, synthesize, release and catabolize GABA and that there are specific GABA binding sites in the bovine pineal gland which bear a marked similarity to GABA receptors in the brain. It was also found that: 1) a direct relationship exists between noradrenergic activity and endogenous GABA levels in the rat pineal gland, 2) GABA inhibited the norepinephrine stimulated accumulation in pineal cyclic GMP but not cyclic AMP, and 3) diazepam affected neither glial GABA uptake into the pineal gland nor glial GABA release from the superior cervical ganglion; however, diazepam did reduce pineal GABA levels in the presence of ethanolamine-O-sulphate. It is concluded that glial GABA may play a significant role in modulating synaptic transmission. Furthermore, the diazepam-induced decrease in pineal glial GABA may explain the decrease in brain GABA turnover previously reported for rats administered diazepam. (Journal abstract modified)

001525 Wannarka, Gerald Lee. Purdue University **Mechanisms of chlorpromazine and chlorpromazine isosteres on the glycemic response in mice. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2143-B, 1980. Ann Arbor, Univ. Microfilms No. 8027348, 145p., 1980.

The effects of chlorpromazine (CPZ) and related compounds on the glycemic response in mice were studied in a number of experiments. The phenothiazines were found to induce glycemic responses varying from very pronounced to no effect. The effects of structural substitutions, levels of liver glycogen, stress, and pretreatment with chlorisondamine were also assessed. It is concluded that in the mouse, the acute CPZ and cyproheptadine-induced hyperglycemia appears to be the result of the centrally mediated block of DA and 5-HT, respectively. (Journal abstract modified)

001526 Wauquier, A. Dept. of Pharmacology, Janssen Pharmaceutica, Turnhoutsebaan 30, B-2340 Beerse, Belgium **The pharmacology of catecholamine involvement in the neural mechanisms of reward.** Acta Neurobiologiae Experimentalis. 40(3):665-686, 1980.

The research literature concerning the pharmacology of catecholamine involvement in the neural mechanisms of reward is reviewed. Functional aspects of brain structures sustaining self-stimulation as related to the control of behavior are discussed. It is noted that the discovery of self-stimulation changed the research emphasis from a purely psychological study of motivation and reinforcement toward the physiology, anatomy, and neurochemistry of reward systems. Conclusion on the functional role of catecholamine systems in behavior reinforced by electrical brain stimulation are discussed. 96 references.

001527 Weber, H. P. Preclinical Research, Sandoz Ltd., CH-4002 Basel, Switzerland **The molecular architecture of ergopeptines: a basis for biological interaction.** Advances in Biochemical Psychopharmacology. 23:25-34, 1980.

To determine the preferred conformation of biologically active ergopeptines, the crystal structures of nine compounds were determined by x-ray analysis. Comparison of these compounds revealed only two conformations for ergopeptines and only one for dihydroergopeptines. It was hypothesized that the prime and necessary requirement for interacton of an ergopeptine with alpha-adrenergic, serotonergic, and dopaminergic receptors is an E-type conformation of the backbone. The type and position of substituents on the E-type backbone can enhance the fit on the receptor by interacting on accessory binding sites, sterically obstruct the fit, or be redundant, thereby modulating, reducing, or not affecting biological activity of the compound. 1 reference.

001528 Weinstock, Marta; Zavadil, Anthony P., III; Muth, Eric A.; Crowley, William R.; O'Donohue, Thomas L.; Jacobowitz, David M.; Kopin, Irwin J. Kopin: Laboratory of Clinical Science, NIMH, Building 10, Room 2D-46, Bethesda, MD 20205 **Evidence that noradrenaline modulates the increase in striatal dopamine metabolism induced by muscarinic receptor stimulation.** European Journal of Pharmacology. 68(4):427-435, 1980.

Oxotremorine (1mg/kg) increased striatal levels of homovanillic acid (HVA, 68%) and 3-methoxy-4-hydroxyphenylglycol (MHPG, 51%) in male Sprague-Dawley rats. MHPG was also increased in the nucleus accumbens (58%) and neocortex (42%). Pretreatment with clonidine (0.1mg/kg) or l-propranolol (2.5mg/kg) abolished the increase in MHPG in the striatum and inhibited the rise in HVA. A lower dose of oxotremorine (0.5mg/kg) increased striatal HVA by 36%, but did not alter MHPG levels. Eight days after bilateral lesions of the locus coeruleus, basal concentrations of noradrenaline and MHPG in the striatum were reduced by 41% and 57%, respectively. Results suggest that noradrenaline can influence dopamine turnover in the corpus striatum and limbic system. 27 references. (Author abstract modified)

001529 Weiss, Benjamin; Greenberg, Louise H. Dept. of Pharmacology, Medical College of Pennsylvania, Philadelphia, PA 19129 **Modulation of beta-adrenergic receptors and calmodulin following acute and chronic treatment with neuroleptics.** Advances in Biochemical Psychopharmacology. 24:139-146, 1980.

Studies of the modulation of beta-adrenergic receptors and calmodulin following acute and chronic treatment with neuroleptics are reviewed. It is noted that neuroleptic drugs may have more than one site of action and that the biochemical effects acutely produced by them may cause compensatory changes that tend to antagonize their acute actions. Acute and chronic actions of neuroleptic drugs on biochemical mechanisms include: 1) acute blocking of the action of catecholamines on the adrenergic receptor/adenylate cyclase complex, thereby preventing the catecholamine-induced rise in cyclic AMP; 2) chronic compensatory induction of these adrenergic receptors; and 3) binding to calmodulin. It is noted that the binding of neuroleptics of calmodulin can explain several of their biochemical actions and suggests that some of the pharmacological and clinical effects of neuroleptics may also be explained by this same common mechanism. 30 references.

001530 Westerink, Ben H. C.; Van Oene, Joop C. Pharmaceutical Labs, Dept. of Medicinal Chemistry, University of Groningen, Antonius Deusinglaan 2, 9713 A W Groningen, The Netherlands **Evaluation of the effect of drugs on dopamine metabolism in the rat superior cervical ganglion by HPLC with electrochemical detection.** European Journal of Pharmacology. 65(1):71-79, 1980.

Drugs known to affect central dopamine turnover, were investigated for their effects on dopamine metabolism in the rat superior cervical ganglion (SCG). A highly sensitive method for the determination of dopamine and 3,4-dihydroxyphenylacetic acid (DOPAC) based on isolation on Sephadex columns in combination with high performance liquid chromatography (HPLC) with electrochemical detection, has been developed. The rate of formation of dopamine as well as of DOPAC was determined by monoamine oxidase inhibition. ()-Amphetamine, apomorphine as well as haloperidol induced a decrease in DOPAC concentration in the SCG. The effect of haloperidol lasted for at

least 8 h. The DOPAC concentrations indicated that chloral hydrate anesthesia markedly inhibited the activity of dopaminergic neurons in the SCG. These observations strongly suggest that the interaction between postsynaptic receptor blockade and the release of dopamine differs in the SCG and in central dopamine receptors. 32 references. (Author abstract modified)

001531 Widelitz, Martin M.; Hable, Charles P., II. V.A. Medical Center, Coatesville, PA 19320 **Amphetamine stereotypies and polyribosomal disaggregation in rats: effects of adrenergic and serotonergic blocking agents.** Psychopharmacology. 72(1):109-110, 1980.

To find the specific chemical moiety responsible for the disaggregation of polyribosomes after induction of aberrated behavior by d-amphetamine, specific amine blockers and reserpine were utilized. It appears that dopamine is responsible for both the disaggregation of polyribosomes and stereotypic behavior while the roles of serotonin and norepinephrine are not significant in this system. In general, dopamine inhibitors proved most successful in preventing brain polyribosomal disaggregation in amphetamized rats as well as inhibiting abnormal behavior. In utilizing methysergide, a blocker of serotonin activiy and DDC, an inhibitor of the production of norepinephrine, extensive disaggregation of the polyribosomes was seen in all but one animal in the DDC group. 6 references. (Author abstract modified)

001532 Widerlov, E. no address **Dose-dependent pharmacokinetics of alpha-methyl-p-tyrosine (alpha-MT) and comparison of catecholamine turnover rates after two doses of alpha-MT.** Journal of Neural Transmission. 44:145-158, 1979.

Rats were injected i.p with 0.407 or 1.02 mM/kg of D,L-alpha-methyl-p-tyrosine methylester HCL(alpha-MT), and the time courses for alpha in plasma and brain were followed, together with the endogenous brain dopamine (DA) and noradrenaline (NA) contents. The elimination of alpha-MT from plasma and brain was markedly delayed after the high alpha-MT dose. At 40 hours after injection of 1.02 mM/kg of alpha-MT both plasma and brain levels were higher, whereas no alpha-MT could be detected at 16 hours after the lower dose. Brain catecholamines were decreased to very low values after the higher dose. There was no complete recuperation at 40 hours of any of the amines. After the lower dose, DA concentration was back to control levels at 16 hours and NA at 12 hours. Between 16 and 40 hours after the high dose, most Ss showed prominent signs of sedation, weight loss, and dehydration, and no such signs were observed in Ss receiving 0.407 mM/kg. When the whole time course after high dosage was considered, biphasic declines were obtained for both DA and NA, suggesting at least two different catecholamine pools. Due to toxic effects of the high dose, turnover data must be interpreted with caution. (Journal abstract modified)

001533 Wilk, Sherwin; Stanley, Michael. Dept. of Pharmacology, Mount Sinai School of Medicine, New York, NY **Striatal DOPAC levels as a predictor of antipsychotic efficacy.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 128-132).

Evidence is presented that the major dopamine metabolite in rat striatum and tuberculum olfactiorium is 3,4-dihydroxyphenylacetic acid (DOPAC) and that it is formed at about twice the rate of homovanillic acid. The research also suggests that striatal DOPAC levels may be used as a predictor of antipsychotic efficacy. Congeners of antipsychotic drugs which were active in preclinical behavioral screening tests, yet were clinically ineffective, produced little or no elevation of DOPAC in the rat. Thiethylperazine, metoclopramide, and perlapine (drugs considered non-antipsychotic) were active in this system. The antipsychotic efficacy of thiethylperazine was also demonstrated. Clinical evaluation of metoclopramide and perlapine at the dose range of chlorpromazine is required to confirm the validity of this predictive system. 24 references. (Author abstract modified)

001534 Wilkerson, R. Douglas; Henderson, James D. Dept. of Pharmacology and Therapeutics, Medical College of Ohio, Toledo, OH 43699 **Antiarrhythmic activity of amitriptyline analogues in conscious dogs after myocardial infarction: cyproheptadinium methiodide.** Journal of Medicinal Chemistry. 23(11):1255-1258, 1980.

The antiarrhythmic effects of amitriptyline, its secondary amine metabolite nortriptyline, as well as cyclobenzaprine and cyproheptadine, tertiary amine analogues of amitriptyline, were studied in conscious dogs 24 hr after myocardial infarction. Since the sedative side-effect of cyproheptadine presents a potential problem for its clinical use, a quarternary derivative, cyproheptadine methiodide, was prepared and its effects also studied in this model. Complete conversion to a normal sinus rhythm occurred in all animals studied after cumulative doses of 1700mcg/kg cyclobenzaprine, 1300mcg/kg of amitriptyline, 300mcg/kg of cyproheptadine; and 25mcg/kg of cyproheptadine methiodide. While nortriptyline significantly decreased ventricular ectopic activity, it did not convert any of the animals studied to a sinus rhythm at doses up to 300mcg/kg. These data suggest that cyproheptadine methiodide is very potent in converting ventricular arrhythmias associated with myocardial infarction. 14 references. (Author abstract modified)

001535 Wilkinson, M.; Moger, W. H.; Grovestine, Dale. Dept. of Physiology and Biophysics, Faculty of Medicine, Dalhousie University, Halifax, Nova Scotia, B3H 4H7, Canada **Chronic treatment with valium (diazepam) fails to affect the reproductive system of the male rat.** Life Sciences. 27(23):2285-2291, 1980.

The effects of chronic treatment with valium (diazepam) on the reproductive system of the male rat were investigated. Male rats treated chronically with high doses of diazepam (50mg/kg for 10 days) failed to exhibit changes in their reproductive system. Testicular and prostate weights, serum testosterone (T) and luteinizing hormone (LH) were unaffected. Testes and pituitary tissue stimulated in vitro with LH and gonadotropin releasing hormone, respectively, released normal amounts of T, LH, and follicle stimulating hormone. Brain benzodiazepine receptors were slightly but significantly elevated by diazepam treatment as well as by castration. It is concluded that the male reproductive system is resistant to chronic diazepam treatment even though the brain levels of benzodiazepine receptors are not. 20 references. (Author abstract modified)

001536 Wirz-Justice, Anna; Wehr, Thomas A.; Goodwin, Frederick K.; Kafka, Marian S.; Naber, Dieter; Marangos, Paul J.; Campbell, Iain C. Clinical Psychobiology Branch, National Institute of Mental Health, Bethesda, MD 20502 **Antidepressant drugs slow circadian rhythms in behavior and brain neurotransmitter receptors.** Psychopharmacology Bulletin. 16(4):45-47, 1980.

The effects of antidepressants and other drugs on circadian rhythms in the rest/activity cycle of hamsters in vivo and in the characteristics of neurotransmitter receptors in vitro were investigated. It was found that the monoamine oxidase inhibitor clorgyline and the tricyclic antidepressant imipramine could slow the frequency of circadian rhythms. The overt rhythms manifesting this change after chronic drug use were: 1) the lengthened free-running period of the circadian rest/activity cycle, and 2) the later phase position of circadian rhythms in alpha and

beta-adrenergic, cholinergic, dopaminergic, and benzodiazepine receptor binding in brain membranes. 3 references.

001537 Witkin, Jeffrey Michael. University of North Carolina at Chapel Hill **Behavioral effects of drugs: the role of the stimulus-reinforcer contingency. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1561-B, 1980. Ann Arbor, Univ. Microfilms No. 8022524, 139p., 1980.

Four experiments were conducted to assess the role of the stimulus/reinforcer contingency (SRC) in the behavioral effects of d-amphetamine (d-AMP, .1 to 5.6mg/kg) and pentobarbital (PB, 1 to 17mg/kg) on keypecking of pigeons under fixed-time (FT 30 sec) or variable time (VT 30 sec) intervals of multiplier schedule, response independent food presentation. D-AMP did not generally increase responses under strong, weak, or no contingency conditions, and decreased responding at high doses. PB increased response rate in the presence of the food correlated stimulus in direct proportion to SRC; and, to a lesser extent, also increased responding in the presence of the stimulus negatively correlated with food delivery (EXT). High rates of pecking which did not strike the response key were maintained under some schedules. Both drugs decreased rates of pecking in a dose related manner. In Experiment 2, SCR was varied by manipulating the EXT component duration of multiple FT30 and VT30 EXT schedules. D-AMP did not decrease responding, while PB produced response rate increases during food correlated stimulus which were a U-shaped function of EXT duration. Experiment 3 shows that drug effects were not systematically related to whether or not responding produced food. Experiment 4 produced effects similar to those in previous experiments under high rates of food delivery, and both drugs increased responding under contingent but not noncontingent low rate food delivery. (Journal abstract modified)

001538 Wong, David T.; Bymaster, Frank P.; Lane, Penny T.; Kau, Donald; Bach, Nicholas J.; Kornfeld, Edmund C. Lilly Research Laboratories, Eli Lilly and Co., Indianapolis, IN 46285 **Binding of (3H)pergolide mesylate to dopamine receptors of mammalian brains.** Research Communications in Chemical Pathology and Pharmacology. 30(2):195-210, 1980.

The specific binding of the ergoline dopamine agonist (3H)pergolide was demonstrated in particulate fractions of male Sprague-Dawley rat and calf brains. Dopamine agonists (apomorphine, lergotrile, bromocriptine, 5,6-dihydroxy-2-dimethylaminotetralin, and 6,7-dihydroxy-2-methylaminotetralin) and dopamine antagonists (haloperidol and -butaclamol) were potent inhibitors of (3H)pergolide binding; dopamine, norepinephrine, epinephrine, and serotonin were weaker inhibitors. Significant (3H)pergolide binding displaceable by 1mcM -butaclamol was found only in the striatum and olfactory tubercle. The number of binding sites was enriched in crude synaptosomal fractions. 18 references. (Author abstract modified)

001539 Wong, K. C.; Puerto, Ana X.; Puerto, Belgio A.; Blatnick, Richard A. University of Utah College of Medicine, Salt Lake City, UT 84132 **Influence of imipramine and pargyline on the arrhythmogenicity of epinephrine during halothane, enflurane or methoxyflurane anesthesia in dogs.** Life Sciences. 27(25&26):2675-2678, 1980.

The influence of imipramine and pargyline on the arrhythmogenicity of epinephrine during halothane, enflurane or methoxyflurane anesthesia in dogs was investigated. Lead II of the ECG, esophageal temperature and femerol arterial pressure were monitored continuously during controlled ventilation, maintaining normocarbia. Epinephrine was infused at the rate of 1mcg/kg/min until the occurrence of three or more consecutive premature ventricular contractions at the end point of the arrhythmia threshold dose. The latter is significantly lower in the imipramine pretreated group in comparison with the pargyline pretreated and the control groups. Results also suggest that methoxyflurane and enflurane may be less harmful to the myocardium than halothane during epinephrine-induced arrhythmias. 6 references. (Author abstract modified)

001540 Wood, J. D.; Schousboe, A.; Krogsgaard-Larsen, P. Dept. of Biochemistry, University of Saskatchewan, Saskatoon, Saskatchewan, Canada **In vivo changes in the GABA content of nerve endings (synaptosomes) induced by inhibitors of GABA uptake.** Neuropharmacology. 19(11):1149-1152, 1980.

Intramuscular administration of (R)-nipecotic acid ethyl ester and 4,5,6,7-tetrahydroisoxazolo(4,5-c)pyridin-3-ol induced an increase in the GABA content of synaptosomal enriched fractions prepared from the brains of treated male Swiss mice. This effect was related and was maximal 30 and 60 minutes after drug administration. Results are discussed in relation to the reported anticonvulsant effects of ethyl (R)-nipecotate. 13 references. (Author abstract modified)

001541 Wood, P. L.; Stotland, L. M. Dept. of Pharmacology, Merck Frosst Labs, P.O. Box 1005, Pointe Claire-Dorval, Quebec, Canada **Actions of enkephalin, mu and partial agonist analgesics on acetylcholine turnover in rat brain.** Neuropharmacology. 19(10):975-982, 1980.

The actions of mu agonists, partial agonists and enkephalin analogues on the turnover rate of acetylcholine (TR/ACh) in several brain areas of rat have been studied. The mu agonists and enkephalin analogues all suppressed TR/ACh in the parietal cortex and hippocampus but not in the striatum or frontal cortex. The partial agonists (kappa agonists, mu antagonists) however, were unique in that they did not alter hippocampal TR/ACh, suggesting that the septal hippocampal cholinergic neurons do not possess kappa receptors and/or are not regulated by neurons bearing kappa receptors. These data indicate that kappa receptor mediated analgesia may involve different neural substrates from those of mu agonists and supports the concept of multiple opiate receptors within the CNS. 46 references. (Author abstract modified)

001542 Woolverton, William L.; Shybut, George; Johanson, Chris E. Dept. of Psychiatry, University of Chicago, 950 East 59th St., Chicago, IL 60637 **Structure-activity relationships among some d-N-alkylated amphetamines.** Pharmacology Biochemistry and Behavior. 13(6):869-876, 1980.

A number of d-N-alkylated amphetamines were synthesized in a series up to and including d-N-butylamphetamine, and potencies of these compounds were compared in three models: 1) rhesus monkeys allowed to respond for intravenous infusions of the drugs; 2) rats allowed to drink a milk solution for 15 min each day; and 3) isolated, spontaneously beating guinea-pig atria. In the self-administration procedure, d-amphetamine, d-N-methylamphetamine, and d-N-ethylamphetmine were self-administered above saline levels at two or more doses by all animals. In rats, all the compounds decreased milk intake in a dose-related manner. With the exception of d-N-butylamphetamine, all compounds increased the rate of beating of the guinea-pig atrium over the range of concentrations tested. In general, for substituents larger than ethyl, potency of d-N-alkylated amphetamines was inversely related to N-alkyl length. 40 references. (Author abstract modified)

001543 Wright, David J. M.; Weller, Malcolm P. I. Dept. of Medical Microbiology, Charing Cross Hospital Medical School, London W6 8RF, England **Neuropharmacological agents modifying endotoxin-induced changes in mice.** Journal of the Royal Society of Medicine. 73(6):431-436, 1980.

A variety of neuropharmacological agents were tested to elucidate how chlorpromazine influences an endotoxin-induced reaction. The results, particularly those with beta-adrenergic blocking agents reserpine and fusaric acid suggest that the primary locus of chlorpromazine's action is mediated by peripheral beta-adrenergic receptor blockade. Such a locus is compatible with the low doses of propranolol which suppress the reaction and with successful treatment of shock with dopamine. 62 references. (Author abstract)

001544 Wunder, B. A.; Hawkins, M. F.; Avery, D. D.; Swan, H. Dept. of Zoology and Entomology, Colorado State University, Fort Collins, CO 80523 **The effects of bombesin injected into the anterior and posterior hypothalamus on body temperature and oxygen consumption.** Neuropharmacology. 19(11):1095-1097, 1980.

Microinjections of bombesin into the preoptic area and lateral ventricle of Sprague-Dawley rats exposed to cold produced dose-dependent depressions in metabolism with subsequent hypothermia. The preoptic injections induced greater depressions in body temperature than the ventricular injections. No changes in oxygen consumption or body temperature were seen after microinjections of bombesin into the posterior hypothalamus. Results suggest that the preoptic area is an important site of action for bombesin and that bombesin-induced hypothermia is mediated, at least in part, by a reduction in metabolic rate. 16 references. (Author abstract modified)

001545 Yamada, Shizuo; Yamamura, Henry I.; Roeske, William R. Roeske: Dept. of Internal Medicine, University of Arizona Health Sciences Center, Tucson, AZ 85724 **Ontogeny of mammalian cardiac alpha1-adrenergic receptors.** European Journal of Pharmacology. 68(2):217-221, 1980.

The number of alpha1-adrenergic receptors in fetal mouse heart (15 to 20 days gestation) was similar to that in adult heart, but the density of alpha1-adrenergic receptors was significantly greater in the early neonate (7 to 21 days). Cardiac norepinephrine concentrations were extremely low in the fetus and increased continuously after birth to reach adult levels at about 21 days of age. Thus, cardiac alpha1-adrenergic receptors mature prior to the development of a presynaptic component. 10 references. (Author abstract modified)

001546 Yamaguchi, Isamu; Torda, Tichomir; Hirata, Fusao; Kopin, Irwin J. Kopin: Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Desensitization of adrenoceptors after immobilization stress or repeated injection of isoproterenol in rats. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 19 p.

Cardiac and vascular responsivity to administered epinephrine were studied in pithed rats after repeated forced or repeated administration of isoproterenol to evaluate the suggested association between stress, hypertension, and desensitization of adrenoceptors. The data show that immobilization stress, similar to isoproterenol injection, desensitizes vascular alpha-receptors and cardiac beta1-receptors, but not vascular beta2-receptors. These results may explain why spontaneously (genetic) hypertensive (SHR) rats become less hypertensive after immobilization stress. This type stress may produce effects on resistance blood vessels which are different from environmental sympathetic stimulation which causes hypertension. The subsensitivity in the vascular beta2-receptors in young SHR rats may be produced from genetic rather than environmental factors. 12 references.

001547 Yamaguchi, Nobuharu; Garceau, Denis. Faculte de Pharmacie, Universite de Montreal, Montreal, Quebec, Canada **Correlations between hemodynamic parameters of the liver and norepinephrine release upon hepatic nerve stimulation in the dog.** Canadian Journal of Physiology and Pharmacology. 58(11):1347-1355, 1980.

Changes in plasma catecholamine levels in hepatic venous blood upon stimulation of hepatic nerves were studied in correlation with concomitant changes in hepatic vascular parameters before and after treatment with desipramine (DMI) in anesthetized dogs. The average plasma catecholamine levels in hepatic venous, portal venous, and aortic blood were found to be 0.073, 0.502, and 0.368ng/mL, respectively under basal conditions. Hepatic nerve stimulation did not change plasma catecholamine levels either in aortic or portal venous blood. Hepatic venous catecholamine levels increased linearly with increasing frequencies of stimulation up to 16 Hz but a further increase was also observed at 32 Hz. Results suggest that changes in plasma catecholamine levels as measured in hepatic venous blood may reflect closely the sympathetic activity changes within the liver in response to direct hepatic nerve stimulation. 43 references. (Author abstract modified)

001548 Yamori, Yukio; Fujiwara, Michihiro; Horie, Ryoichi; Lovenberg, Walter. Dept. of Pathology, National Shimane Medical School, Izumo, Japan **The hypotensive effect of centrally administered tyrosine.** European Journal of Pharmacology. 68(2):201-204, 1980.

Intraventricular injection of 15mcg L-tyrosine resulted in a significant reduction in blood pressure in spontaneouly hypertensive male rats. An increase in the turnover of brain norepinephrine was observed concurrently. Results are consistent with the proposed depressor role of certain central noradrenergic neurons. 11 references. (Author abstract modified)

001549 Yavorskii, A. N. Lab. of Medicinal Toxicology, Institute of Pharmacology, Academy of Medical Sciences of the USSR, Moscow, USSR **Influence of chronic alcohol intoxication on circadian rhythm of neurosecretory centers of rat hypothalamus.** Neuroscience and Behavioral Physiology. 10(6):473-475, 1980.

The influence of chronic alcohol intoxication on circadian rhythm of neurosecretory centers of rat hypothalamus was investigated. Results confirm the presence of a circadian rhythm in the functional activity of the hypothalamic/hypophyseal neurosecretory system in rats. Chronic alcohol intoxication led to disturbance in the synthesis, transport, and excretion of neurohormones, as well as disturbance in the normal physiological rhythm of the activity of the hypothalamic neurosecretory centers. The data also suggest that the disorganization of the normal rhythm of the vital activity of the organisms is the result of the injurious effect of alcohol on the principal endogenous synchronizer of biorhythms, the neurosecretory centers of the hypothalamus. 11 references.

001550 Yotis, A. Dept. de Recherches medicales Sandoz S.A., Case Postale, CH-4002 Bale, Switzerland **/Brain catecholamines, mental illnesses, aging and senile dementia: biochemical and pharmacological considerations./** Catecholamines cerebrales, maladies mentales, vieillissement et demences seniles: considerations biochimiques et pharmacologiques. Encephale. 5(4):339-358, 1979.

The role of catecholamines in mental illness, especially in the elderly, is examined. These neurotransmitters act in a wide range of brain structures and are involved in many important functions, such as general arousal; autonomic, neuroendocrine and motor control; and possibly in emotions and mental processing. The model of neurotransmission, and the mechanism by which various substances act at the synaptic level, are outlined briefly. Due to the fact that the catecholamines are implicated in many important brain functions, it has been suggested that certain mental diseases such as depression, as well as mental and

behavioral manifestations of the aging brain, may have their origin in an impairment and a functional deficiency of the catecholamines at various structures. Senile mental deterioration and the mental impairment encountered in various types of dementia may be due to deficiency of brain catecholamines. Since catecholamine and particularly dopamine deficiency seem to be a common denominator in depression and in senile mental deterioration, it is suggested that dopaminergic drugs may serve as useful therapeutic means, on the one hand, and as important tools for testing the validity of the above assumptions, on the other. 91 references. (Journal abstract modified)

001551 Zalcik, J.; Svorad, D. CPS, INPF, SAS, Sienkiewiczova 1, 884 23 Bratislava, Czechoslovakia **Atropine and natural sleep: activity data of the striatum in rats.** Activitas Nervosa Superior. 22(3):210-211, 1980.

The effects of topical application of atropine sulfate to the striatum on the sleep/waking cycle and on EEG and single unit activity were investigated in freely-moving rats. Cortical and hippocampal electrical activity was recorded continuously and was correlated with behavioral signs of waking and sleeping. The incidence of basic interimpulse interval patterns was different during sleep and after administration of atropine. The average length of intervals did not change significantly in sleep and after atropine. There was significant dependence of interval patterns on the duration of average intervals and coefficients of variation in sleep and after atropine. 5 references.

001552 Zatz, Martin. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Pineal gland. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 39 p.

An overview of the rat pineal gland, a neuroendocrine transducer that is innervated exclusively by sympathetic nerves, is presented. Material covered includes: synthesis of melatonin; circadian rhythms in pineal indoleamines; neuroendocrine transduction; induction of serotonin N-acetyltransferase activity by beta-adrenergic stimulation (the role of cyclic adenosine 3',5'monophosphate (AMP) and regulation of sensitivity to stimulation); and the role of endogenous cyclic guanylic acid or GMP in the regulation of pineal function. 78 references.

001553 Zawoiski, E. J. Dept. of Physiology, Jefferson Medical College, Thomas Jefferson University, Philadelphia, PA 19107 **Central actions of norepinephrine, phentolamine and 6-hydroxydopamine in spontaneously hypertensive rats.** Archives Internationales de Pharmacodynamie et de Therapie. 247(1):103-118, 1980.

The effects of centrally administered norepinephrine, isoproterenol, phentolamine, and 6-hydroxydopamine on mean arterial blood pressure, heartrate, and pulmonary respiration were examined in urethane anesthetized, spontaneously hypertensive rats. Norepinephrine produced significant pressor responses when it was instilled into the posterior hypothalamic region and/or the pars magnocellularis region of the ventral medial thalamus. Central pretreatment with phentolamine blocked these responses. Administration of 6-hydroxydopamine or isoproterenol in the hypothalamic/thalamic region of the diencephalon produced significant depressor responses. Norepinephrine and isoproterenol did not produce pressor or depressor responses when instilled into the reticular formation. Results suggest that receptors that respond to norepinephrine are located in the posterior hypothalamic/ventral medial thalamic region of the diencephalon, and that cells located in these areas send projection fibers directly or indirectly to the vasomotor center in the brainstem. 27 references. (Author abstract modified)

001554 Zhang, An-Zhong; Pasternak, Gavril W. Pasternak: Memorial Sloan-Kettering Cancer Center, 1275 York Ave., New York, NY 10021 **Mu- and delta-opiate receptors: correlation with high and low affinity opiate binding sites.** European Journal of Pharmacology. 67(2/3):323-324, 1980.

Regional opiate receptor binding sensitivity to naloxazone was determined in Sprague-Dawley rat brain. Naloxazone significantly decreased opiate binding in areas rich in mu-receptors, such as the hypothalamus and spinal cord. The frontal cortex, which is rich in delta-receptors, was markedly insensitive to naloxazone treatment, as were the midbrain and pons medulla. Midbrain and frontal cortex had little high affinity binding, while the striatum and spinal cord had high levels. 5 references.

001555 Zukin, Stephen R.; Zukin, R. Suzanne. Dept. of Psychiatry, Mount Sinai School of Medicine, New York, NY **(3H)-Phencyclidine binding to specific brain receptor sites.** Psychopharmacology Bulletin. 16(4):59-62, 1980.

The binding of (3H)-phencyclidine, (3H)-PCP, to specific brain receptor sites was studied in homogenates of whole brains, brain regions, and subcellular fractions of brain tissue from male rats. The specific (3H)-PCP sites meet the classical criteria of saturability, reversibility, selectivity, and correlation with behavioral data required of a pharmacologically relevant receptor site. Biochemical evidence is presented consistent with specific synaptic receptors for PCP analogous to those for opiates and benzodiazepines. The finding that the subicular cortex and hippocampus were the brain regions most enriched in (3H)-PCP binding activity corresponds to recent results showing these areas to undergo intense metabolic stimulation following PCP administration. 9 references.

001556 Zvartau, E. E. Kafedra farmakologii I Leningradskogo meditsinskogo instituta im. akad. I. P. Pavlova, Leningrad, USSR **/The effect of naloxone on the activation of emotionally positive reaction produced by drugs with a dependence liability./** Vliyaniye naloksona na effekt aktivatsii emotsional 'no-pozitivnykh sistem mozga veshchestvami, vyzyvayushchimi zavisimost'. Farmakologiya i Toksikolgiya. 43(3):313-317, 1980.

The effect of naloxone on the activation of an emotionally positive reaction produced by drugs with a dependence liability was studied in rats using Nichrome electrodes implanted in the lateral hypothalamic area. The reactions of the animals were tested in the course of 5 to 10 minutes in a chamber with one pedal, the pushing of which led to the stimulation of the brain by a series of 30 single phase impulses with a duration of 1 millisecond. Results show that naloxone causes lateral hypothalamic self-stimulation activated by heroin to drop to its initial level, or to be depressed. There are some symptoms of opiate withdrawal. The effects of cocaine and amphetamine remain unchanged after the blocking of opiate receptors. Naloxone exerts a partial antagonistic action towards the activation of reward after diazepam and pentobarbital administration. 15 references. (Journal abstract modified)

04 MECHANISM OF ACTION: BEHAVIORAL

001557 Abelson, Joanne S.; Woods, James H. CNS Pharmacology Section, Warner-Lambert/Parke-Davis Research Labs, 2800 Plymouth Rd., Ann Arbor, MI 48105 **Effects of apomorphine on elicited and operant pecking in pigeons.** Psychopharmacology. 71(3):237-241, 1980.

Apomorphine (0.001 to 32.0mg/kg) elicited dose-related pecking in pigeons, with maximal responding at 3.2mg/kg. However, marked interindividual differences were found when the drug was given to birds responding on a multiple 5 minute fixed-interval, 30 response fixed-ratio scheudle. The effects of apomorphine on operant behavior appeared to depend on drug-induced stereotypy; rate-decreasing effects appeared to be due to the disruption of ongoing behavior by stereotyped pecking aimed else-

where in the chamber, and rate increases appeared to be due to redirection of elicited pecking toward the operant key. 17 references. (Author abstract modified)

001558 Acosta, J.; Gomez-Jarabo, G.; Ortega, J.; Espinosa, L.; Rodriguez-Sanabra, F. Universidad Autonoma de Madrid, Madrid, Spain **/Betta splendens maze behavior under the influence of the beta-fenil-isopropil-amina (sulphate)./** Conducta en laberinto del betta splendens por accion de la beta-fenil-isopropil-amina (sulfato). Revista de Psicologia General y Aplicada. 35(4):617-623, 1980.

The effect of beta-fenil-isopropil-amina (sulphate) on a previously acquired maze behavior in the Siamese fighting fish Betta-splendens, using two different dosages of the amphetamine, was studied. Thirty fish were trained in 44 sessions to correctly run the maze and then were divided into three groups. Each of the three groups was injected 30 minutes before running the maze. The control group was injected with a saline solution, a second group was injected with 0.3g/g (higher dosage) of beta-fenil-isopropil-amina, and a third group was injected with 0.03g/g (minimum dosage) of the amphetamine. The results show that the lower dosage increases the performance time but not the number of errors, and the higher dosage affects learning negatively by increasing both the time and the errors. 20 references. (Journal abstract modified)

001559 Albertson, T. E.; Peterson, S. L.; Stark, L. G.; Baselt, R. C. Dept. of Pharmacology, School of Medicine, University of California, Davis, CA 95616 **Barbiturate serum levels and protection against kindled amygdaloid seizures in the rat.** Neuropharmacology. 19(11):1141-1144, 1980.

The relation between serum levels of phenobarbital, pentobarbital, and primidone and the degree of protection against kindled amygdaloid seizures (KAS) was studied in male Sprague-Dawley rats. Increased anticonvulsant protection 30 minutes after drug administration was correlated with increased serum levels of pentobarbital and phenobarbital. Levels of the primidone metabolites pentobarbital and phenylethylmalonamide 30 minutes, 2 hours, and 48 hours after primidone administration also appeared to be associated with increased protection against KAS, but serum primidone levels were not. 10 references. (Author abstract modified)

001560 Albiniak, Bernard A.; Powell, D. A. Dept. of Psychology, Coastal Carolina College, Conway, SC 29526 **Peripheral autonomic mechanisms and Pavlovian conditioning in the rabbit (Oryctolagus cuniculus).** Journal of Comparative and Physiological Psychology. 94(6):1101-1113, 1980.

The effects of peripheral administration of atropine methyl nitrate and 6-hydroxydopamine hydrobromide on differential classical conditioning of eye blink (EB) and heartrate (HR) responses in the rabbit were investigated. Atropine decreased HR conditioned response (CR) magnitude and increased baseline HR; although the latter declined somewhat over the first few sessions of the experiment. As baseline declined, EB CRs increased in Ss treated with atropine, but the acquisition of the EB response was impaired in these Ss compared with Ss treated with saline. Administration of 6-hydroxydopamine impaired HR response early and late during acquisition, but had no effect on EB conditioning. Control experiments suggested that the impairments produced by methyl atropine were not due to general somatomotor deficits or to a differential sensitivity to the electric shock unconditioned stimulus. The conditioning data are consistent with Lacey's peripheral afferent feedback hypothesis of autonomic/somatic relations. 33 references. (Author abstract modified)

001561 Altman, Jack L.; Appel, James B.; McGowan, William T., III. Appel: Behavioral Pharmacology Laboratory, Dept. of Psychology, University of South Carolina, Columbia, SC 29208 **Drugs and the discrimination of duration.** Psychopharmacology. 60(2):183-188, 1979.

The effects of lysergic acid diethylamide (LSD), d-amphetamine (d-AMP), chlorpromazine (CPZ), and the most active isomer of marihuana (delta9-THC) on timing behavior were analyzed with a two choice, discrete trial procedure in which pigeons were trained to discriminate visual stimuli that differed with respect to duration. LSD decreased response speed (increased latency), but otherwise had no significant effect on performance of the discrimination. d-AMP increased perseveration or spatial bias and, at a dose of 4.0mg/kg, lowered response speed. This compound did not significantly alter accuracy. CPZ significantly decreased accuracy and, at a dose of 30.0mg/kg, significantly lowered speed; delta9-THC also decreased accuracy and lowered speed. 29 references. (Author abstract modified)

001562 Applegate, Craig D. Dept. of Psychology, University of Vermont, Burlington, VT 05405 **5,7-Dihydroxytryptamine-induced mouse killing and behavioral reversal with ventricular administration of serotonin in rats.** Behavioral and Neural Biology. 30(2):178-190, 1980.

The effects of serotonin depletion on the behavior of male Long-Evans rats which naturally do not kill mice were examined. The animals were administered 5,7-dihydroxytryptamine (5,7-DHT) in a saline ascorbic acid vehicle or a vehicle alone to the left lateral ventricle. The 5,7-DHT treatment resulted in a significant increase in the incidence of mouse killing over vehicle injected controls in the absence of effects on other behaviors investigated. In a second experiment, 5,7-DHT-treated rats were administered doses of serotonin, and an additional group of spontaneously mouse-killing rats also received doses of serotonin. This manipulation led to an increase in the latency of both groups to kill mice over both preinjection latencies and control animals. An inhibitory role for serotonin in the mediation of mouse killing is suggested. 34 references. (Author abstract modified)

001563 Bain, George Thomas. Boston University Graduate School **The effects of norepinephrine perfusion of the mesencephalic reticular formation on behavior in the rat: interaction with several neuroleptic drugs on a measure of sustained attention. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):1661-B, 1980. Ann Arbor, Univ. Microfilms No. 8024174, 182p., 1980.

The effects of norepinephrine perfusion of the mesencephalic reticular formation (MRF) on the performance of an attention task by rats were examined along with the effects of neuroleptic drugs on any norepinephrine-induced alteration of performance. When tested with norepinephrine alone, all of the 12 animals tested showed impairment of performance. The animals were then tested with several drugs. The clinically effective phenothiazines, chlorpromazine and thioridazine, blocked the impairment of performance produced by norepinephrine perfusion. Promethazine and haloperidol were ineffective in blocking the norepinephrine effect and appeared in a number of animals to increase the impairment. A lack of blocking by haloperidol suggests that this attention impairment is a noradrenergic phenomenon rather than dopaminergic. The findings support the animal model of hyperarousal and by inference indicate that norepinephrine is probably intimately involved with the hypothesized state of hyperarousal of certain schizophrenics. (Journal abstract modified)

001564 Bakhuis, Walter L.; Bour, Harry L. M. G. Caribbean Marine Biological Institute (Carmabi), Piscaderabaai, Curacao, Netherlands Antilles **The behavioural state during climax (hatching) in the domestic fowl (Gallus Domesticus).** Behaviour. 73(1-2):77-105, 1980.

The question of whether climax behavior (CB or hatching) in the chick is related to paradoxical sleep (PS) or wakefulness was investigated. Behavioral and polygraphic criteria were employed, and drugs (melatonin and amphetamine) were administered. Melatonin suppressed wakefulness, hatching, and PS, but the reappearance of PS did not coincide with that of CB. Amphetamine suppressed PS, but, except for a short period of ataxia, it did not inhibit CB. Lowering of ambient temperature stimulated wakefulness without interfering with CB. Whereas hatching is characterized by vigorous movements, only weak movements could be detected during PS. It is concluded that CB is related to wakefulness and not to PS. 59 references. (Author abstract modified)

001565 Balthazart, J.; Deviche, P.; Hendrick, J. C. Laboratoire de Biochimie Generale et Comparee, Universite de Liege, Liege, Belgium **Long-term effects of testosterone injections on the social behaviour of male ducks and their physiological correlates.** Behavioural Processes. 5(4):323-338, 1980.

During three independent experiments, it was demonstrated that repeated injections of testosterone propionate (TP) induce, after termination of treatment, a strong inhibition of social displays in intact male domestic ducks. This behavioral inhibition may last for several months and appears relatively specific, as sexual behavior was generally normal in the previously injected birds. As the effect can be induced by injections given when the birds are already several months old, it is probably not related to the neonatal differentiation of the brain. It is postulated that the behavior inhibition results from a decreased sensitivity to testosterone of the neural mechanism involved in the control of displays, and possible mechanisms explaining this decreased sensitivity at the biochemical level are briefly reviewed. 73 references. (Author abstract modified)

001566 Barmack, Neal H.; Pettorossi, Vito E. Neurological Sciences Institute, 1120 NW 20th Avenue, Portland, OR 97209 **Vestibulo-ocular reflexes in rabbits: reduction by intravenous injection of diazepam.** Archives of Neurology. 37(11):718-722, 1980.

The influence of intravenously administered diazepam on the horizontal (HVOR) and vertical (VVOR) vestibulo/occular reflexes of the rabbit was investigated. HVOR and VVOR were evoked by sinusoidal oscillation of rabbits on a rate table, and eye movements were measured with an infrared light projection technique. The gains of the HVOR and VVOR (evoked eye velocity/head velocity) were reduced by diazepam injection of 5mcg/kg. The dose required to produce a 50% reduction in HVOR gain was 500mcg/kg. The time required to reduce the HVOR gain to 50% of its maximal reduction at a dose of 400mcg/kg was 60 s. These data suggest that diazepam might be effective as an antimotion sickness agent. 22 references. (Author abstract modified)

001567 Bass, M. B.; Lester, D. Center of Alcohol Studies, Rutgers University, New Brunswick, NJ 08903 **Tolerance to ethanol-induced impairment of water escape in rats bred for ethanol sensitivity.** Psychopharmacology. 71(2):153-158, 1980.

The development of ethanol (EtOH) tolerance was studied in rats selectively bred for high or low sensitivity to the acute effects of EtOH on locomotor activity. The acquisition and loss of tolerance to the effects of EtOH on water escape behavior did not differ in the two lines. Results suggest that the genes that influence sensitivity to the acute effects of EtOH are largely independent of those that influence acquired tolerance to EtOH. 26 references. (Author abstract modified)

001568 Beleslin, D. B.; Samardzic, Ranka. Dept. of Pharmacology, Medical Faculty, Belgrade 11000 P.O. Box 662, Yugoslavia **Comparative study of aggressive behaviour after injection of cholinomimetics, anticholinesterases, nicotinic, and muscarinic ganglionic stimulants into the cerebral ventricles of conscious cats: failure of nicotinic drugs to evoke aggression.** Psychopharmacology. 60(2):147-153, 1979.

Emotional behavior, especially aggression, evoked by cholinomimetics, anticholinesterases, nicotinic, and muscarinic ganglionic stimulants injected into the cerebral ventricles of unanesthetized cats was studied and compared. Aggressive behavior was obtained after intraventricular carbachol, muscarine, arecoline, eserine, neostigmine, and 4-m-chlorophenyl-carbamoyloxy-2-butynyl-trimethylammonium chloride (McN-A-343). The aggressive behavior and the autonomic and motor phenomena of various single doses of cholinomimetics and anticholinesterases were dose dependent and long-lasting. The ability of single intraventricular injections of cholinomimetics and anticholinesterases to trigger and to maintain long-lasting aggressive behavioral phenomena cannot be ascribed to a rapid detonator transmission, but rather to an action that differs from the conventional transmitter function. It is hypothesized that the cholinoceptive neurons sensitive to cholinomimetics and anticholinesterases behave as a biologic generator that when activated produces long-lasting aggression with autonomic and motor phenomena. 31 references. (Author abstract modified)

001569 Beleslin, D. B.; Samardzic, Ranka. Dept. of Pharmacology, Medical Faculty, Belgrade 11000, P.O. Box 662, Yugoslavia **The pharmacology of aggressive behavioural phenomena elicited by muscarine injected into the cerebral ventricles of conscious cats.** Psychopharmacology. 60(2):155-158, 1979.

Aggressive behavioral phenomena elicited by muscarine injected into the cerebral ventricles of conscious cats were investigated. Atropine and scopolamine, injected intraventricularly, abolished typical emotional behavior with aggression and autonomic and motor phenomena, as well as with clonic/tonic convulsions of intraventricularly injected muscarine. On the other hand, adrenergic and dopaminergic blocking agents, antihistamines, 5-hydroxytryptamine (5-HT) antagonists, antiepileptic drugs, and 5-HT, administered inraventricularly, failed to antagonize the gross behavioral effects of intraventricular muscarine. It is concluded that the sites activated by muscarine in the CNS producing aggressive behavior have the following characteristic: in high doses muscarine acted on muscarinic cholinoceptive sites, while in small doses it activated the cholinoceptive sites having muscarinic and nicotinic characteristics. Also, the ability of single intraventricular injections of muscarine to trigger and to maintain the long-lasting gross behavioral effects cannot be ascribed to a rapid detonator transmission, but rather to an action that differs from a conventional transmitter function. 14 references. (Author abstract modified)

001570 Bender, W.; Greil, W.; Ruther, E.; Schnelle, K. Psychiatrische Klinik, Universitat Munchen, D-8000 Munich 2, Germany **Effects of the beta-adrenoceptor blocking agent sotalol on CNS: sleep, EEG, and psychophysiological parameters.** Journal of Clinical Pharmacology. 19(8-9, Part 2):505-512, 1979.

The effects of the beta-adrenoceptor blocking agent sotalol on sleep, EEG, and psychophysiological parameters were investigated in 12 healthy volunteer Ss. Ss were administered sotalol (320mg or 960mg) daily for a period of 4 days in a double-blind trail over 11 days. The effects of sotalol on heartrate, blood

pressure, EEG, subjective quality of sleep, polygraphically determined sleep pattern, and psychophysiological parameters such as psychomotor performance, memory, perception, vigilance, and general condition were studied and were related to dosage and plasma levels. Steady-state plasma levels of sotalol were reached within 24 hr after a single dose. Dose/plasma relationships indicated first order linear absorption. The effects of sotalol on EEG, sleep, and performance in psychological tests were equivocal and do not yield evidence for CNS activity of sotalol. 20 references. (Author abstract modified)

001571 Benesova, O. Dept. of Pharmacology and Physiology, Medical Faculty of Hygiene, Ke Karlovu 4, Charles University, 120 00 Prague 2, Czechoslovakia **The effects of nootropic drugs on the susceptibility to audiogenic seizures in rats.** Activitas Nervosa Superior. 22(3):192-193, 1980.

The effects of nootropic drugs (piracetam and pyritinol) on the susceptibility to audiogenic seizures were investigated in rats. Thirty-five rats sensitive to audiogenic seizures were tested before drug administration, 24 hr after drug administration, and 7 days after drug withdrawal. Rats were treated with piracetam (one group for 10 days with a daily dose of 100mg/kg, the second group for 12 days with a daily dose of 150mg/kg), and with pyritinol for 10 days (20mg/kg/day). The intensity of the convulsive reaction throughout the three tests increased in the control group, but significantly decreased immediately after initial administration of piracetam and remained low 7 days after drug withdrawal. Pyritinol did not significantly change the course of the audiogenic seizures. 1 reference.

001572 Beninger, Richard J.; Hanson, Dale R.; Phillips, Anthony G. Dept. of Psychology, Queen's University, Kingston, Ontario K7L 3N6, Canada **The effects of pipradrol on the acquisition of responding with conditioned reinforcement: a role for sensory preconditioning.** Psychopharmacology. 69(3):235-242, 1980.

The effects of pipradrol on the acquisition of responding with conditioned reinforcement were investigated, and the possible role of nonspecific stimulus change, feeding in the test environment and prior exposure to the conditioned stimulus was examined. It was hypothesized that the conditioned reinforcement effect seen in the food-alone groups resulted from sensory preconditioning. According to this hypothesis, the tone was conditioned to environmental stimuli during the preexposure phase; subsequent presentation of pellets resulted in a learned association between environmental stimuli and food leading to increased responding for the tone in the test phase. Results of two control experiments support this view. It is concluded that pipradrol enhances acquisition of responding with conditioned reinforcement even if the conditioned reinforcing stimulus is established with sensory preconditioning procedures. 24 references. (Author abstract modified)

001573 Bennett, Edward L.; Rosenzweig, Mark R.; Flood, James F. Laboratory of Chemical Biodynamics, Lawrence Berkeley Laboratory, Berkeley, CA 94720 **Role of neurotransmitters and protein synthesis in short- and long-term memory.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 211-219).

A series of studies employing anisomycin, an effective inhibitor of cerebral protein synthesis and an effective amnestic agent for both passive and active behavioral tasks, to investigate the role of neurotransmitters and protein synthesis in short-term and long-term memory is described. It is concluded that the level of arousal following acquisition plays an important role in determining the duration and the rate of the biosynthetic phase of memory formation. Data support the notion that anisomycin's principal amnestic mechanism does not involve inhibition of the catecholamine system, and that protein synthesis is an essential component for long-term memory trace formation. It is suggested that proteins synthesized in the neuronal cell body used, in conjunction with other molecules, to produce permanent and semi-permanent anatomical changes. 16 references. (Author abstract modified)

001574 Bergmann, F.; Elam, R. Dept. of Pharmacology, Hebrew University-Hadassah Medical School, Jerusalem, 91 000, Israel **On the mechanism of action of 2-amino-4-methylpyridine, a morphine-like analgesic.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):275-282, 1980.

Implants of 2-amino-4-methylpyridine (2-AMP) in the ventral lateral thalamus of male Sabra rats did not induce stereotyped behavior, but subcutaneous injection of 2-AMP suppressed the compulsive gnawing and biting induced by thalamic implants of morphine. This antagonistic effect of 2-AMP was abolished by pretreatment with p-chlorophenylalanine or naloxone. Results suggest that 2-AMP has only a weak effect on type-1 opiate receptors which are linked to a dopaminergic mechanism, but possesses a high affinity for type-2 opiate receptors, which are connected with serotonergic pathways. 13 references. (Author abstract modified)

001575 Bhargava, Hemendra N.; Matwyshyn, George A. Dept. of Pharmacognosy and Pharmacology, College of Pharmacy, University of Illinois, Medical Center, Chicago, IL 60612 **Influence of thyrotropin releasing hormone and histidyl-proline diketopiperazine on spontaneous locomotor activity and analgesia induced by delta9-tetrahydrocannabinol in the mouse.** European Journal of Pharmacology. 68(2):147-154, 1980.

The effect of thyrotropin releasing hormone (TRH) and histidyl-proline diketopiperazine (HPD) on the sedation and analgesia produced by delta9-tetrahydrocannabinol (THC) were studied in male Swiss-Webster mice. Results showed that TRH and HPD can antagonize THC-induced sedation and analgesia and that HPD may be an active metabolite of TRH. TRH and HPD had no effect on the disposition of THC, suggesting they may have acted directly on the CNS. Opiate receptors did not appear to be involved in the analgesia induced by the THC or its antagonism by TRH and HPD. 29 references. (Author abstract modified)

001576 Bhargava, Hemendra N.; Ritzmann, Ronald F. Dept. of Pharmacognosy and Pharmacology, University of Illinois, Medical Center, Chicago, IL 60612 **Inhibition of neuroleptic-induced dopamine receptor supersensitivity by cyclo (Leu-Gly).** Pharmacology Biochemistry and Behavior. 13(5):633-636, 1980.

The effects of cyclo (Leu-Gly) on the behavioral supersensitivity of dopamine receptors induced in mice by chronic administration of haloperidol and its subsequent withdrawal were investigated. Behavioral supersensitivity was evidenced by enhanced spontaneous locomotor activity and hypothermic responses to a dopamine agonist, apomorphine. Concurrent administration of cyclo, the enzymatically resistant diketopiperazine, an analog of melantropin release inhibiting factor, blocked haloperidol-induced dopamine receptor supersensitivity as evidenced by the blockade of apomorphine-induced responses. Since many studies have linked the development of neuroleptic-induced tardive dyskinesias with enhanced sensitivity of brain dopamine receptors, and the latter was blocked by cyclo (Leu-Gly), this agent may be of value in preventing the development of symptoms of neuroleptic-induced tardive dyskinesias. 35 references. (Author abstract modified)

001577 Biazzi, A.; Fregnan, G. B. Research Division, Lusofarmaco, Milano, Italy **Behavioral, anti-dopaminergic, and prohypnotic effects of neuroleptics during and after prolonged treatment.**

Advances in Biochemical Psychopharmacology. 24:351-357, 1980.

Behavioral, antidopaminergic, and prohypnotic effects of neuroleptics during and after prolonged treatment were investigated. Data are presented concerning the effects induced by LR 511 (4-p-fluorophenyl-5-N(N'-o-methoxyphenyl) piperazinoethyl-4-oxazolin-2-one), haloperidol (HAL) and clozapine (CLOZ) during or at the interruption of a prolonged treatment. The reported data show that LR 511, a novel neuroleptic drug, resembles HAL and CLOZ causing phenomena of tolerance and dopaminergic supersensitivity, which vary according to the experimental model. After prolonged treatment, CLOZ seems to induce a true catalepsy in contrast to the inactivity observed following a single administration. 17 references.

001578 Blackburn, Thomas P.; Foster, George A.; Heapy, Christopher G.; Kemp, Janet D. Research (Biology) Dept., ICI Pharmaceuticals Div., Alderly Park, Macclesfield, Cheshire, SK10 4TG, England **Unilateral 5,7-dihydroxytryptamine lesions of the dorsal raphe nucleus (DRN) and rat rotational behaviour.** European Journal of Pharmacology. 67(4):427-438, 1980.

Unilateral lesions in the dorsal raphe nucleus (DRN) of male SPF rats resulted in decreased concentrations of 5-hydroxytryptamine (5-HT) in the ipsilateral striatum (CS), anterior cortex, and substantia nigra (SN); a loss of (3H 5-HT) uptake in the cortex and striatum; and a selective reduction in 5-HT turnover in the SN. The direct 5-HT agonist 5-methoxy-N,N-dimethyltryptamine (5-MeODMT) induced contralateral turning in the lesioned animals, but the 5-HT releasing agent p-chloroamphetamine induced ipsilateral rotation. All rotational behavior was blocked by haloperidol, and turning behavior induced by 5-MeODMT was blocked by methysergide. Results suggest that the DRN innervates the SN and CS differentially and that nigral 5-HT receptors become supersensitive after denervation of the DRN/SN pathway. 58 references. (Author abstract modified)

001579 Blair, R.; Cytryniak, H.; Shizgal, P.; Amit, Z. Center of Research on Drug Dependence, Concordia University, 1455 de Maisonneuve Blvd. West, Montreal, Quebec H3G 1M8, Canada **Heroin, but not levorphanol, produces explosive motor behavior in naloxone-treated rats.** Psychopharmacology. 69(3):313-314, 1980.

The effects of heroin and levorphanol in producing explosive motor behavior (EMB) in naloxone-treated rats were investigated. Intraventricular infusion of heroin (an opiate) or levorphanol (an opioid) in rats produced rigidity but not EMB. When preceded by an i.p. injection of naloxone, infusions of heroin but not levorphanol produced EMB. Results suggest that naloxone-antagonized effects of opiates mask EMB and that certain opioids do not induce EMB. 6 references. (Author abstract modified)

001580 Bond, Nigel W. School of Behavioural Sciences, Macquarie University, North Ryde, N.S.W., Australia **Postnatal alcohol exposure in the rat: its effects on avoidance conditioning, Hebb-Williams maze performance, maternal behavior, and pup development.** Physiological Psychology. 8(4):437-443, 1980.

The effects of postnatal alcohol exposure on offspring performance in two learning tasks and on maternal behavior and pup development were investigated. In Experiment 1, lactating Ss consumed ethanol in the diet during days 0 to 17 of the nursing period, and offspring were tested on a two-way shock avoidance task and a Hebb-Williams maze at 75 and 150 days, respectively. Offspring of ethanol-fed dams were impaired on the shock avoidance task but did not differ from controls on the maze. Experiment 2 examined the behavioral development of pups of ethanol-fed dams and the observed behavioral changes were restricted to day 17 during the period of withdrawal from the diet. Dams on the ethanol diet spent less time in the nest area and also engaged in locomotor activity; and their pups displayed increased litter fragmentation and spent more time rearing. Given the transient nature of the observed behavioral changes, it is concluded that the learning deficit was not mediated via alterations in maternal behavior and was probably due to a direct effect of ethanol on the CNS of the developing pup. 28 references. (Author abstract modified)

001581 Bouyer, Jean-Jacques; Rougeul, Arlette. Laboratoire de Neurophysiologie comparee, Universite Pierre et Marie Curie, F-75005 Paris, France **Comparative anxiolytic and hypnotic effects of 3 benzodiazepines on baboons.** Electroencephalography and Clinical Neurophysiology. 49(3-4):401-405, 1980.

The ECoG and behavioral effects of administering three benzodiazepines (diazepam, nitrazepam, lorazepam) were tested in baboons restrained in a chair, with arms fastened (a situation which is considered anxiogenic). Considering previous data with ECoG recording of focal rhythms from area somatic I, the three drugs were revealed as anxiolytic. Differences were noticed with respect to their hypnotic effects: no sleep was elicited under diazepam; a considerable amount of slow sleep was observed with lorazepam; nitrazepam produced a succession of short waking/sleep cycles. 15 references. (Author abstract modified)

001582 Brady, Kathleen T.; Balster, Robert L. Balster: Box 613 MCV Station, Richmond, VA 23298 **The effects of delta9-tetrahydrocannabinol alone and in combination with cannabidiol on fixed-interval performance in rhesus monkeys.** Psychopharmacology. 72(1):21-26, 1980.

The effects of delta9-tetrahydrocannabinol (THC) alone and in combination with cannabidiol (CBD) on fixed interval performance in rheusus monkeys were investigated. Four rhesus monkeys were trained to lever press on a fixed interval 5 min schedule of food presentation with a 1 min limited hold and 1 min timeout between successive intervals. The effects of 0.3mg/kg and 1.0mg/kg THC alone were determined three times during the experiment; before the CBD/THC interaction, after the CBD-THC interaction and once with the CBD vehicle. A dose of 30mg/kg CBD, which alone resulted in a 24% reduction in responding, completely antagonized the response rate reduction produced by 0.3mg/kg THC. The effect of the THC revealed a rate dependent effect that did not conform to the log linear rate dependency plots described for most other drugs. 31 references. (Author abstract)

001583 Branch, Marc N.; Dearing, Michael E.; Lee, Dennis M. Psychology Dept., University of Florida, Gainesville, FL 32611 **Acute and chronic effects of delta9-tetrahydrocannabinol on complex behavior of squirrel monkeys.** Psychopharmacology. 71(3):247-256, 1980.

In squirrel monkeys trained to press two or five differently colored keys for food reward, delta9-tetrahydrocannabinol (THC) reduced the accuracy and rate of responding in a dose-related fashion. Drug effects were most pronounced in the five key procedure and at the beginning of a sequence. Daily administration resulted in the development of tolerance to the effects of THC on rate and accuracy of responding. Tolerance developed more rapidly to drug effects on accuracy than on rate and under the two key procedure than under the five key procedure. 18 references. (Author abstract modified)

001584 Bridger, W. H.; Barr, G. A.; Gibbons, J. L.; Schimmel, G. T. Albert Einstein College of Medicine, Bronx, NY 10461 **Dual effects of mescaline: the transmethylation hypothesis revisit-**

ed. In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (P. 170-174).

A series of studies examining the conditions under which mescaline disrupts or facilitates two way conditioned avoidance acquisition is described. Data indicate that mescaline can either facilitate or disrupt avoidance, and that the disruptive effect shows physiologic tolerance and that stress combined with chronic treatment results in a facilitative effect. This suggests that mescaline may act through two different biological/biochemical mechanisms. While the parameters that determine which effect will occur are not clear, it is hypothesized that stress (e.g., prior exposure to inescapable shock) may result in facilitative effects. The relationship of these data to the transmethylation hypothesis of schizophrenia is discussed. 9 references. (Author abstract modified)

001585 Broekkamp, C. L.; Garrigou, D.; Lloyd, K. G. Lers-Synthelabo, Dept. of Neuropharmacology, 31, avenue P. V. Couturier, F-92220 Bagneux, France **Serotonin-mimetic and antidepressant drugs on passive avoidance learning by olfactory bulbectomised rats.** Pharmacology Biochemistry and Behavior. 13(5):643-646, 1980.

Olfactory bulbectomized rats were treated with serotonin mimetic and antidepressant drugs and their rate of acquisition of a passive avoidance task was measured. The acquisition rate, which is disturbed by the bilateral ablations, was completely restored by acute administration of fenfluramine or fluoxetine. Partial restoration was found with quipazine. Clonidine was without effect. Repeated treatment with imipramine and mianserine improved passive avoidance in bulbectomized rats. Metergoline blocked these effects of imipramine and mianserine. These results indicate a serotonergic mechanism in the effect of antidepressants on olfactory bulbectomized rats. 28 references. (Author abstract modified)

001586 Brown, Judson S.; Mansfield, James G.; Skurdal, Arlie J. University of Oregon Health Sciences Center, Portland, OR 97201 **An interference-reduction theory of the effects of ethanol on conflict behavior.** Physiological Psychology. 8(4):423-432, 1980.

An alternative to the classic tension reduction theory of the effects of ethanol on approach/avoidance conflict behavior, which involves the assumption that the drug reduces conflict by selectively weakening fear-motivated avoidance (but not approach), is proposed. The alternative view sees alcohol as reducing the capacity of the weaker of any two competitive tendencies, whether inhibitory or excitatory, to interfere with the stronger. Data from studies of isolated avoidance gradients and from experiments on approach/avoidance and avoidance/avoidance conflicts which support the proposed alternative are presented. 37 references. (Author abstract modified)

001587 Brown, W. Jann; Schalock, R. L. UCLA Center for Health Sciences, Los Angeles, CA **Effects of experimental hypothyroidism on learning in rats.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 714-719).

In a study of the effects of experimental hypothyroidism on learning in neonatal rats given propylthiouracil experienced interference with the timetable of normal neuronal dendritic development and synaptogenesis. No distinct delay in maturation occurred and delay was also found in vitro by dissociation of newborn rat cortex, followed by reaggregation in a culture media which was made thyroid deficient. Behavioral studies of 120-day-old euthyroid rats made hypothyroidic during early postnatal life (1 to 20 days) showed persistent increased general activity and decreased performance on both avoidance and escape learning. It is concluded that this is a useful model for the study of the effects of pharmacological agents on perseveration. 15 references. (Author abstract modified)

001588 Callaghan, D. A.; Schwark, W. S. Schwark: Dept. of Physiology, Biochem., and Pharma., New York State College of Veterinary Medicine, Cornell University, Ithaca, NY 14853 **Pharmacological modification of amygdaloid-kindled seizures.** Neuropharmacology. 19(11):1131-1136, 1980.

The effects of antiepileptic drugs on amygdaloid kindled seizures were studied in male Sprague-Dawley rats. Phenobarbital, diazepam, and trimethadione produced dose dependent decreases in the severity and amygdaloid afterdischarge duration (ADD) of full kindled seizures. In contrast, phenytoin appeared to increase seizure severity and ADD. The general anesthetic ketamine was only weakly effective in abolishing established kindled seizures, but markedly inhibited kindling when administered from the outset of amygdaloid stimulation. The antikindling action of ketamine may be related to its ability to enhance central noradrenergic activity. 23 references. (Author abstract modified)

001589 Carter, C. J.; Pycock, C. J. Dept. of Neurology, Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, England **5,7-Dihydroxytryptamine lesions of the amygdala reduce amphetamine- and apomorphine-induced stereotyped behaviour in the rat.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(3):235-238, 1980.

The effects of selective 5-hydroxytryptamine (5-HT) depletion in the amygdala on stereotyped behavior induced by amphetamine and apomorphine were studied in male Porton rats. Chemical lesions (5,7-dihydroxytryptamine) directed toward the central nucleus of the amygdala produced a selective and localized destruction of 5-HT terminals within the amygdaloid complex, without damaging dopamine neurons. These lesions attenuated the biting responses produced by amphetamine or apomorphine, suggesting that these behavioral effects may be mediated by 5-HT in the amygdala. 23 references. (Author abstract modified)

001590 Cazala, Pierre. Laboratoire de Psychophysiologie, Universite de Bordeaux I, Institut de Biologie animale, avenue des Facultes, F-33405 Talence Cedex, France **Effects of Lilly 110140 (fluoxetine) on self-stimulation behavior in the dorsal and ventral regions of the lateral hypothalamus in the mouse.** Psychopharmacology. 71(2):143-146, 1980.

The effects of fluoxetine on self-stimulation of the dorsal and ventral regions of the lateral hypothalamus were studied in C57BL/6 mice. Fluoxetine, a serotonin reuptake inhibitor, depressed dorsal self-stimulation at a low dose (5mg/kg i.p.) and improved ventral self-stimulation at a high dose (20mg/kg i.p.). Results support the proposed inhibitory effect of serotonin on self-stimulation and suggest that fibers communicating with certain serotonergic neurons are localized primarily in the dorsal region of the lateral hypothalamus. 23 references. (Author abstract modified)

001591 Chakrabarti, J. K.; Fairhurst, J.; Gutteridge, N. J. A.; Horsman, L.; Pullar, I. A.; Smith, C. W.; Steggles, D. J.; Tupper, D. E.; Wright, F. C. Lilly Research Centre Limited, Windlesham, Surrey GU20 6PH, England **10-Piperazinyl-4H-thieno(3,2-b)(1,5) and (3,4-b)(1-5) benzodiazepines as potential neuroleptics.** Journal of Medicinal Chemistry. 23(8):884-889, 1980.

The synthesis of 10-piperazinyl-4H-thieno(3,2-b)(1,5)- and -(3,4-b)(1,5)benzodiazepines is described. The activity of these compounds was assessed on the basis of their ability to produce

hypothermia in mice and block a conditioned avoidance response (CAR) and produce catalepsy in rats, and the results are compared with various classical and nonclassical neuroleptic drugs. A number of compounds demonstrate potency greater than clozapine and also show a low degree of catalepsy. It is believed that this profile of activity, unlike standard neuroleptics, is associated with the relative lack of extrapyramidal side-effects in the clinic. The corresponding 9-piperazinyl-4H-thieno(1,4)benzodiazepines limited analogues prepared in the respective series, were inactive. 12 references. (Author abstract)

001592 Chakrabarti, Jiban K.; Horsman, Linda; Hotten, Terrence M.; Pullar, Ian A.; Tupper, David E.; Wright, Francesca C. Lilly Research Centre Limited, Windlesham, Surrey GU20 6PH, England **4-Piperazinyl-10H-thieno(2,3-b)(1,5)benzodiazepines as potential neuroleptics.** Journal of Medicinal Chemistry. 23(8):878-884, 1980.

A series of 4-substituted 10H-thieno(2,3-b)(1,5)benzodiazepines was synthesized and evaluated for potential use as neuroleptics. These compounds have been assessed for their ability to block a conditioned avoidance response (CAR) and to produce catelepsy in rats and compared with several typical and atypical neuroleptics. The compounds which inhibit CAR at doses which produce no catalepsy are believed to cause less extrapyramidal side-effects in the clinic. A number of compounds showed potent neuroleptic activity yet maintain a favorable separation of activity on these two parameters. Three 5-piperazinyl-10H-thieno(2,3-b)(1,4)benzodiazepine derivatives analogous to compounds in the (1,5) series have been prepared for comparison and were found to be inactive. 19 references. (Author abstract modified)

001593 Clark, T. K. Biological Sciences Dept., University of Pittsburgh, Pittsburgh, PA 15260 **Male rat sexual behavior compared after 6-OHDA and electrolytic lesions in the dorsal NA bundle region of the midbrain.** Brain Research. 202(2):429-443, 1980.

The effects of 6-hydroxydopamine (6-OHDA) and electrolytic lesions in the dorsal noradrenergic (NA) bundle, with and without desmethylimipramine (DMI) pretreatment, on male rat sexual behavior were investigated. For the behaviorally tested rats receiving 6-OHDA treatment, critical NA was depleted to 17% and to 81% of control, without and with DMI, respectively. Hypothalamic NA was depleted to 60% and 102% respectively. For rats with electrolytic lesions, cortical NA was depleted to 46% of control and caudate dopamine was not depleted. For the electrolytically-lesioned rats, the first three postejaculatory intervals decreased by an average of 24%, while the 1h ejaculatory frequency increased by 17%, which confirms a prior finding. However, no measured sexual behavioral effects were observed with 6-OHDA. Thus, interrupting the dorsal noradrenaline bundle has not been shown to have any effect on sexual behavior in the male rat. 39 references. (Author abstract modified)

001594 Claus, George; Kling, Arthur; Bolander, Karen. Dept. of Psychiatry, CMDNJ, Rutgers Medical School, Piscataway, NJ 08854 **Effects of methaqualone on social behavior in monkeys (macaca mulatta).** Brain, Behavior and Evolution. 17(5):391-410, 1980.

The effects of intramuscular methaqualone (10mg/kg) on behavioral changes in treated animals of an established social group of rhesus monkeys (macaca mulatta) were studied. New behaviors were observed, such as active grooming, autofellatio, and masturbation in both dominant male and adolescent male, while some previous behaviors disappeared or decreased. The midranking female showed an increase in aggressive behavior. A biphasic action of the drug was also observed in all Ss, through which the males were at first mainly passive or engaged in grooming and later started either to masturbate or autofellate. The social status and behavior of the animals later returned to predrug levels. During the drug treatment, marked changes occurred in the behavior of other colony members. 25 references. (Author abstract modified)

001595 Commissaris, R. L.; Lyness, W. H.; Cordon, J. J.; Moore, K. E.; Rech, R. H. Dept. of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824 **The effects of d-lysergic acid diethylamide (LSD), 2,5-dimethoxy-4-methylamphetamine (DOM) and d-amphetamine on operant responding in control and 6-hydroxydopamine-treated rats.** Pharmacology Biochemistry and Behavior. 13(5):621-626, 1980.

The role of central catecholaminergic neuronal systems in the effects of d-lysergic acid diethylamide (LSD), 2,5-dimethoxy-4-methylamphetamine (DOM), and d-amphetamine on fixed-ratio (FR) operant responding in rats was investigated. Food deprived male rats were trained to press a bar for food reinforcement on a FR40 schedule. LSD and DOM, as well as other hallucinogens, produced dose-dependent periods of nonresponding or pausing followed by reinstatement of responding at or near the control rate. Administration of d-amphetamine did not produce pausing, but caused the response rate to slow and become erratic. In animals pretreated with 6-hydroxydopamine (6-OHDA), the response to LSD and DOM was unchanged, while the response to d-amphetamine was significantly diminished. Results demonstrate that the effects of LSD and DOM on FR4O responding are quite different from those of d-amphetamine, and that this difference may be due to the extent of catecholamine involvement in the effects of these agents. 15 references. (Author abstract modified)

001596 Concannon, James T.; Freda, Jon. Dept. of Pharmacology, Northeastern Ohio Universities, College of Medicine, Rootstown, OH 44272 **Modulation of conditioned taste aversion by sodium pentobarbital.** Pharmacology Biochemistry and Behavior. 13(6):761-764, 1980.

The effects of pentobarbital on the formation and expression of LiCl-induced taste aversion were examined using a two-bottle preference test. Rats adapted to restricted fluid intake were offered a 15% sucrose solution 15 min after a pentobarbital or saline injection but prior to post-CS LiCl or control injections. All animals were tested 3 days later in either the same or opposite drug state, and were returned to the conditioning day drug state for a second test. Results showed that pentobarbital in testing disrupted evidence for taste aversion in a manner not simply accounted for by its dipsogenic effects. It is suggested that the present paradigm may prove to be a simple behavioral assay for screening putative anxiolytic drugs. 10 references. (Author abstract)

001597 Concannon, James T.; Riccio, David C.; Maloney, Ronald; McKelvey, James. Riccio: Dept. of Psychology, Kent State University, Kent, OH 44242 **ACTH mediation of learned fear: blockade by naloxone and naltrexone.** Physiology & Behavior. 25(6):977-979, 1980.

The blockade by naloxone and naltrexone of adrenocorticotropic hormone (ACTH) meditation of learned fear was investigated. Adult male rats received an ACTH or saline injection 24 hr after noncontingent footshock experience or apparatus exposure without shock. For some of the animals, narcotic antagonists (naltrexone, naloxone) were administered prior to the ACTH. Only animals receiving prior noncontingent footshock experience and ACTH in conjunction with specific cue exposure showed reliable avoidance of the shuttlebox cues. Control

groups showed that neither shock-induced sensitization nor place aversion contributed substantially to the aversion of the specific cues. Since the ACTH-mediated learning was blocked by specific narcotic antagonists, endogenous opioid involvement appears to be implicated in this type of learning. 25 references. (Author abstract modified)

001598 Cooper, S. J.; Sweeney, K. F. Dept. of Psychology, University of Birmingham, Birmingham B15 2TT, England **Effects of spiperone alone and in combination with anorectic agents on feeding parameters in the rat.** Neuropharmacology. 19(10):997-1003, 1980.

The effects of spiperone alone and in combination with anorectic agents on feeding parameters in the rat were investigated. Spiperone reduced food intake in a short duration feeding test, as a result of retarding the rate of feeding and not as a consequence of reducing feeding duration. On the other hand, spiperone tended to antagonize the anorectic actions of mazindol and ()-amphetamine by reversing the severe reduction in feeding duration produced by these two drugs. Mazindol and ()-amphetamine shared the effects of lengthening latency to begin feeding, of reducing feeding duration, but of not reducing the rate of feeding. These effects were clearly dissociated from the anorectic action of fenfluramine, which like that of spiperone, was due to a reducing in the rate of feeding, but not of feeding duration. Spiperone pretreatment enhanced the rate reducing effect of fenfluramine. In making comparisons between these drugs, it is concluded that it is important to distinguish between rate and duration parameters in the study of feeding behavior. 24 references. (Author abstract modified)

001599 Cooper, Steven J. Dept. of Psychology, University of Birmingham, P.O. Box 363, Birmingham B15 2TT, England **Naloxone: effects on food and water consumption in the non-deprived and deprived rat.** Psychopharmacology. 71(1):1-6, 1980.

The effects of naloxone on food and water consumption in the nondeprived and the deprived rat were investigated. Naloxone reduced both food and water intake in nondeprived male rats tested in the dark phase of the light/dark cycles in their home cages. These effects were transient; food and water intake were restored to control levels by the end of the 8 hr test period. Their effects were also not dose-related. Naloxone also reduced water intake in water-deprived and food-deprived animals, without altering food intake. These results suggest that naloxone may exert a primary antidipsogenic action that does not depend upon any suppression of feeding. A final experiment demonstrated that naloxone could suppress feeding, even though food intake was markedly inhibited by the osmotic thirst stimulus. Hence, the activation of feeding responses is not a necessary condition for naloxone to suppress feeding. 16 references. (Author abstract modified)

001600 Cooper, Steven J.; Francis, Raymond L. Dept. of Psychology, University of Birmingham, Birmingham B15 2TT, England **Interactions of chlordiazepoxide and anorectic agents on rate and duration parameters of feeding in the rat.** Psychopharmacology. 69(3):261-265, 1980.

The interactions of chlordiazepoxide and anorectic agents on rate and duration parameters of feeding in the rat were investigated. d-Amphetamine and dl-fenfluramine reduced food intake in a short exposure feeding test, and their effects were counteracted by chlordiazepoxide. Chlordiazepoxide reduced latency to eat, extended the duration of feeding and depressed the rate of feeding. Antagonism occurred in combination with d-amphetamine in relation to latency and duration, but d-amphetamine did not affect feeding rate. Antagonism also occurred in combination with fenfluramine, with latency and duration measures, but only at the lower chlordiazepoxide dose. Instead, the higher dose of chlordiazepoxide (10.0mg/kg) enhanced fenfluramine's effects to reduce feeding duration and feeding rate. 22 references. (Author abstract modified)

001601 Copeland, R. L., Jr.; Aulakh, C. S.; Bhattacharyya, A. K.; Pradhan, S. N. Dept. of Pharmacology, Howard University College of Medicine, Washington, DC 20059 **Behavioral depression and its neurochemical correlates at high doses of d-amphetamine in rats.** Neuropharmacology. 19(10):1027-1030, 1980.

Behavioral depression and its neurochemical correlates at high doses of d-amphetamine in rats were studied. d-Amphetamine at low doses increased spontaneous motor activity (SMA) and induced stereotypy (ST) in rats with the peak effects occurring during the 2nd hour. Dopamine (DA) levels in the caudate nucleus and diencephalon/midbrain (DM) as well as the norepinephrine level in the DM were markedly elevated at 60 min postdrug. However, at high doses, the peak effect of SMA occurred during the first hr and was decreased, level in the pons/medulla showed most marked elevation. Decrease in SMA at high doses appears to be partly due to DA related increase in ST and partly due to an enhanced inhibitory 5-HT mechanism. 13 references. (Author abstract modified)

001602 Corson, Samuel A.; Corson, Elizabeth O'Leary. Dept. of Psychiatry, Ohio State University, Columbus, OH 43210 **Interaction of psychopharmacologic and psychosocial factors in the treatment of animal models of hypoinhibitory (hyperkinetic) behavior.** In: Obiols, J., Biological pyschiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 662-666).

A naturally-occurring, dog model of childhood hyperkinesis is described, in which the effects of amphetamine on behavior of untrainable hyperkinetic dogs and cats were examined. Some of these dogs respond favorably to d-amphetamine and l-amphetamine in a ratio of 1:4, suggesting the involvement of a dopaminergic system. Psychosocial therapy under amphetamine produced long lasting effects after the drugs were discontinued. It is postulated that stimulant drugs, by modifying the biochemical milieu of appropriate neural structures, make it possible to utilize effectively psychosocial therapeutic methods, which are essential for long-term improvement in adaptive behavior. (Author abstract modified)

001603 Costall, B.; Hui, S.-C. G.; Naylor, R. J. Postgraduate School of Studies in Pharmacology, University of Bradford, Bradford BD7 1DP, England **Denervation in the dopaminergic mesolimbic system: functional changes followed using (-)N-n-propylnorapomorphine depend on the basal activity levels of rats.** Neuropharmacology. 19(11):1039-1048, 1980.

Male Sprague-Dawley rats injected peripherally with (-)N-n-propylnorapomorphine (NPA) developed hyperactivity and stereotypy, with clear separation of time course for the two behaviors. Locomotor hyperactivity was also observed after injection of 6-hydroxydopamine (6-OHDA) into the nucleus accumbens of rats pretreated with desmethylimipramine and tranylcypromine. Behavioral effects of NPA were reduced 2 to 4 days after 6-OHDA treatment, returned to normal by day 8, and showed supersensitivity from days 12 to 56. However, changes in mesolimbic responsiveness to NPA following denervation varied markedly with the animals' basal activity levels. 27 references. (Author abstract modified)

001604 Cytawa, Jerzy; Jurkowlaniec, Edyta. Institute of Medical Biology, Medical Academy, Debinki 1, 80-211 Gdansk, Poland **Intrahypothalamic microinjections of noradrenaline with and without induction of the alimentary drive as a reward in a T maze learning in rats.** Acta Neurobiologiae Experimentalis. 39(1):41-47, 1979.

The reinforcing effects of two categories of intrahypothalamic noradrenaline (NA) microinjections (those evoking or not evoking an eating response) were investigated using a T-maze procedure. Injection of NA into the perifornical region of the anterior portion of the lateral hypothalamus of rats reinforced T-maze learning regardless of whether or not it evoked an eating response. It is claimed that intrahypothalamic microinjections of NA evoke pleasurable states, which constitute sufficient reinforcement of motivated behavior. 37 references. (Author abstract modified)

001605 Davis, Michael; Astrachan, David I.; Gendelman, Phillip M.; Gendelman, David S. Yale University School of Medicine, Connecticut Mental Health Center, 34 Park Street, New Haven, CT 06508 **5-Methoxy-N,N-dimethyltryptamine: spinal cord and brainstem mediation of excitatory effects on acoustic startle.** Psychopharmacology. 70(2):123-130, 1980.

The effects of different doses of 5-methoxy-N,N-dimethyltryptamine (5-MeODMT) were tested on the acoustic startle reflex in rats. Beginning at 0.12mg/kg, 5-MeODMT increased startle monotonically up to the highest dose used. 5-MeODMT still increased startle in acutely decerebrate rats or when infused directly onto the spinal cord. The excitatory effects of a high systemic dose of 5-MeODMT were completely blocked by cinanserin, cyproheptadine, and propranolol, but not by parachlorophenylalanine, alpha-methyl-p-tyrosine, haloperidol, sotalol, or phenoxybenzamine. Results are discussed in terms of a new theory, which suggests that stimulation of serotonin receptors in the spinal cord enhances startle whereas serotonin receptors in the forebrain inhibit startle. 33 references. (Author abstract modified)

001606 de Boer, Th.; Bartels, K.; Metselaar, H. J.; Bruinvels, J. Bruinvels: Dept. of Pharmacology, Erasmus University Rotterdam, P.O. Box 1738, Rotterdam, The Netherlands **Di-n-propylacetate-induced abstinence behaviour as a possible correlate of increased GABA-ergic activity in the rat.** Psychopharmacology. 71(3):257-267, 1980.

The succinic semialdehyde dehydrogenase inhibitor di-n-propylacetate (DPA) induced abstinence behavior in naive male Wistar rats. This behavior could be suppressed by morphine, bicuculline, picrotoxin, and 3-mercaptopropionate, but not by strychnine or thiosemicarbazide. The DPA-induced abstinence behavior was also suppressed by the GABA transaminase inhibitor aminooxyacetic acid, which did not itself induce abstinence behavior. Results suggest that GABA terminals, GABA autoreceptors, and opiate receptors are involved in DPA-induced abstinence behavior. 57 references. (Author abstract modified)

001607 De Vaus, June E.; Gibbs, Marie E.; Ng, K. T. Dept. of Psychology, La Trobe University, Bundoora 3083, Australia **Effects of social isolation on memory formation.** Behavioral and Neural Biology. 29(4):473-480, 1980.

The effects of social isolation to induced amnesia were examined with day old chicks. If chicks were isolated during training, the onset of amnesia (the inhibition of memory formation for a passive avoidance task) resulting from potassium chloride or ouabain was delayed, while amnesia due to cycloheximide was prevented. It is suggested that the counteractive effect of isolation on cycloheximide-induced amnesia is due to isolation extending some phase of memory preceding the cycloheximide sensitive protein synthesis dependent phase, until cycloheximide inhibition of protein synthesis starts to dissipate. A possible mechanism is the release of noradrenaline associated with isolation-induced changes in hormonal levels. 20 references. (Author abstract modified)

001608 DeWitt, John R.; Nielson, Harold C. Dept. of Psychology, University of Utah, Salt Lake City, UT **Effects of drugs on the effectiveness of conditioned stimuli.** Physiological Psychology. 8(4):444-450, 1980.

Drugged and nondrugged cats were trained to give the same foreleg flexion response (CR) to two different conditioned stimuli (CSs): 1) a 1000Hz tone and 2) a direct electrical stimulation of either the caudate nucleus or the hippocampus. Pentobarbital and other depressant drugs had consistent, differential effects on performance of CRs to the two different CSs. Cats drugged with pentobarbital learned to respond to the brain stimulation, but seemingly could not learn to respond to the tone unless they previously had acquired CRs to the brain stimulation. For all but one of the nondrugged trained cats, doses of pentobarbital, chloralhydrate, meprobamate, or chlordiazepoxide were found that abolished CRs to tone, but left the same CRs to brain stimulation intact. Implications of these results with respect to the drug stimulus hypothesis and other current explanations of state dependent learning are discussed. 24 references. (Author abstract modified)

001609 Doi, T.; Sawa, N. Medical Research Laboratories, Central Research Division, Takeda Chemical Industries Ltd., Yodogawa-ku, Osaka 532, Japan **Antagonistic effects of psycholeptic drugs on stress-induced analgesia.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):264-274, 1980.

Analgesia induced by tail shock in male ICR mice was significantly antagonized by naloxone and dose dependently reduced by diazepam, chlordiazepoxide, flurazepam, medazepam, nitrazepam, estazolam, phenobarbital, chlorpromazine, levomepromazine, haloperidol, and propranolol. Morphine substantially increased the threshold of nociceptive response in the poststress session. The centrally-acting muscle relaxants tolperisone and carisoprodol had no substantial antistress effects. Results suggest that stress-induced analgesia is mediated through endogenous opioids in the CNS. 17 references. (Author abstract modified)

001610 Domjan, Michael; Best, Michael R. Dept. of Psychology, University of Texas, Austin, TX 78712 **Interference with ingestional aversion learning produced by preexposure to the unconditioned stimulus: associative and nonassociative aspects.** Learning and Motivation. 11(4):522-537, 1980.

Unconditioned stimulus (US) lithium chloride preexposure effects on taste aversion learning were investigated in a series of studies in the rat. Preconditioning US exposure interfered with the subsequent learning of a conditioned ingestional aversion. Multiple US preexposures produced a long-lasting, durable interference with learning, while a single US exposure produced transient interference. The durable US preexposure effect was substantially reduced when the method of drug treatment (infusion versus injection of the drug into the peritoneal cavity) or the spatial cues present during drug treatment (home cage versus a distinctive environment) were changed between the preexposure and taste conditioning phases. In contrast, these manipulations did not attenuate the proximal/transient US preexposure effect. These findings indicate that different mechanisms are responsible for the two US preexposure effects. Results are consistent with previous suggestions that the durable effects of lithium preexposure are due to associative interference produced by the exteroceptive stimuli that accompany drug administration and indicate that the proximal/transient US preexposure effect is mediated by nonassociative mechanisms. 22 references. (Author abstract modified)

001611 Dykstra, Linda A. Dept. of Psychology, 013A, University of North Carolina, Chapel Hill, NC 27514 **Effects of morphine, pentazocine and cyclazocine alone and in combination with**

naloxone on electric shock titration in the squirrel monkey. Journal of Pharmacology and Experimental Therapeutics. 211(3):722-732, 1979.

The effects of morphine, pentazocine, and cyclazocine were compared in a discrete trial shock titration procedure in male squirrel monkeys. The three drugs produced similar alterations in patterns and rates of responding. At low doses, all three drugs increased rates of responding in the presence or absence of shock. At higher doses, the drugs decreased rates of responding in the absence of shock. The effects of morphine were antagonized by naloxone in a dose as low as 0.01mg/kg, but higher doses were required to antagonize the effects of pentazocine and cyclazocine. 30 references. (Author abstract modified)

001612 Ervin, F. R.; Palmour, R. M.; Guzman-Flores, C.; Pacheco, P. NPI, University of California, Los Angeles, CA 90024 **Behavioral and electrophysiological effects of opioid peptides in cats.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 720-725).

The behavioral and electrophysiological effects of D-ala2-met5 enkephalin (DAME), D-ala2-leu5 enkephalin (DALE), met5-beta-endorphin (ME), and leu5-beta-endorphin (LE) were documented following intracerebroventricular (icvt) administration to awake cats equipped with cortical and limbic recording electrodes. At high doses (100mcg to 400mcg), DALE elicited limbic and cortical hypersynchronous firing accompanied by fixed staring immobility, and cats intermittently displayed bouts of backing and hissing or hallucinations. Similar behavioral and electrophysiological effects were observed following icvt ME or LE at doses of 25mcg, 50mcg, or 100mcg. Duration of action was dose dependent, with very long effects at high doses. Many of the behavioral and EEG effects of opioid peptides were naloxone suppressible for short time periods. 9 references. (Author abstract modified)

001613 Estler, C.-J.; Gabrys, Monika C. Institut fur Pharmakologie und Toxikologie, Univ. Erlangen-Nurnberg, Universitatsstrasse 22, D-8520 Erlangen, West Germany **Swimming capacity of mice after prolonged treatment with psychostimulants: II. Effect of methamphetamine on swimming performance and availability of metabolic substrates.** Psychopharmacology. 60(2):173-176, 1979.

Swimming endurance and availability of metabolic substrates (blood glucose and nonesterified fatty acids (NEFA), liver and muscle glycogen, body fat) were studied in mice treated with 10mcg/g methamphetamine/day for 6 weeks. At the end of the 6-week treatment, motor coordination of the methamphetamine-treated animals was much better than that of controls, and swimming capacity tended to increase. While swimming, mice treated with methamphetamine mobilized more glycogen from the hepatic stores and utilized glucose more effectively. Their NEFA levels in blood were higher than those of controls. There was no difference in the muscular glycogen content. 15 references. (Author abstract modified)

001614 Evered, Mark D.; Robinson, Marilyn M.; Richardson, Mark A. Dept. of Physiology, University of Western Ontario, London, Canada N6A 5C1 **Captopril given intracerebroventricularly, subcutaneously or by gavage inhibits angiotensin-converting enzyme activity in the rat brain.** European Journal of Pharmacology. 68(4):443-449, 1980.

Intracerebroventricular (i.c.v.) injection of 2mcg captopril nearly abolished drinking responses elicited by i.c.v. injections of 1mUnit hog renin, 10pmol synthetic renin substrate, or 10pmol angiotensin-I in male Wistar rats, but did not alter drinking elicited by 10pmol angiotensin-II. Inhibition of the response to precursors of angiotensin-II was dose dependent (20ng to 2mcg captopril) and lasted for at least 2 hours. Subcutaneous injections of 0.1 to 1.0mg/kg captopril reduced pressor responses by i.v. injections of angiotensin-I without attenuating drinking elicited by i.c.v. injections of angiotensin precursors. Higher doses of captopril, given subcutaneously (5 to 50mg/kg) or by gavage (10mg/kg), reduced drinking elicited by i.c.v. injections of renin or angiotensin-I, but not angiotensin-II. 18 references (Author abstract modified)

001615 Fanselow, Michael S.; Sigmundi, Ronald A.; Bolles, Robert C. Dept. of Psychology, Rensselaer Polytechnic Institute, Troy, NY 12181 **Naloxone pretreatment enhances shock-elicited aggression.** Physiological Psychology. 8(3):369-371, 1980.

The behavioral effect of naloxone on shock-elicited aggression was examined. Pairs of rats were placed in a chamber and given electric shocks of varying intensities in a random order. Two sessions, 48 hours apart, were given to each pair. Shock-elicited aggression increased with shock intensity. Pretreatment, before a session, with the opiate antagonist naloxone resulted in greater aggression than was evidenced by saline-pretreated controls. It is suggested that the effect of naloxone upon shock-elicited aggression is mediated by the antagonistic action of the drug upon the endogenous opiate analgesic system which causes nociceptive stimulation to be perceived as more noxious than it would normally be if the analgesic system was unopposed. 17 references. (Author abstract modified)

001616 Fessler, Richard G.; Sturgeon, R. David; Meltzer, Herbert Y. Laboratory of Biological Psychiatry, Illinois State Psychiatric Institute, Chicago, IL **Effects of phencyclidine and methylphenidate on d-amphetamine-induced behaviors in reserpine pretreated rats.** Pharmacology Biochemistry and Behavior. 13(6):835-842, 1980.

The effects and interactions of phencyclidine (PCP), methylphenidate, and d-amphetamine on locomotor activity, stereotyped behavior, and ataxia in reserpine-pretreated and vehicle-pretreated rats were examined. PCP, methylphenidate, and d-amphetamine each induced significant increases in locomotor activity and stereotyped behavior when administered alone. Reserpine was found to antagonize PCP-induced locomotor activity and stereotyped behavior, and methylphenidate induced stereotyped behavior at a dose which either potentiated or had no significant effect upon d-amphetamine induced behavior. Whereas PCP potentiated the locomotor activity induced by d-amphetamine in both reserpine-pretreated and control animals, methylphenidate marginally antagonized d-amphetamine-induced stereotypy in reserpine pretreated Ss. In general, the behavioral effects of PCP appear to be more similar to those of methylphenidate than to those of d-amphetamine, but differences are also found between PCP and methylphenidate. Results are discussed in relation to a behavioral model recently proposed as a method for differentiating indirect dopamine agonists on the basis of their neurochemical mechanisms of action. 34 references. (Author abstract modified)

001617 File, Sandra E. Dept. of Pharmacology, School of Pharmacy, University of London, Brunswick Square, London, WC1N 1AX, England **Naloxone reduces social and exploratory activity in the rat.** Psychopharmacology. 71(1):41-44, 1980.

The effects of naloxone on social and exploratory activities in the rat were investigated. Naloxone (1,2, and 4mg/kg) produced a dose-related decrease in exploratory head dipping in rats placed singly in a holeboard for 10 min, without concomitant reduction in locomotor activity. Naloxone reduced the time spent in active social interaction by pairs of rats tested in an unfamiliar or in a familiar test arena, and also reduced the amount of motor activity shown by the pairs of rats. Results are consist-

ent with proposed roles for opiate peptides in behavioral responses to novel environments and in mediating social contact. 26 references. (Author abstract modified)

001618 Fischer, Gloria J.; Vail, Barbara J. Dept. of Psychology, Washington State University, Pullman, WA 99164 **Preexposure to delta9-THC blocks THC-induced conditioned taste aversion in rats.** Behavioral and Neural Biology. 30(2):191-196, 1980.

The effect of preexposure to delta9-THC on a THC induced conditioned taste aversion was examined with hooded rats. Preexposure to delta9-THC four times blocked a THC-induced taste aversion in the same drug dosage. The preexposure effect was apparent in females at a lower dosage than males, suggesting a greater sensitivity of females to the drug. A preexposure effect was not found at a higher drug dosage. If drug-induced stress is the basis for conditioned taste aversion, then higher drug dosages may produce more stress than the animals can adapt to. 16 references. (Author abstract modified)

001619 Flint, Bryan A.; Ho, Ing K. Dept. of Pharmacology and Toxicology, University of Mississippi Medical Center, Jackson, MS 39216 **Tolerance development to phencyclidine by chronic administration.** Progress in Neuro-Psychopharmacology. 4(3):233-239, 1980.

Tolerance development to phencyclidine (PCP) was assessed in male ICR mice using motor coordination ability as an indicator. The ED50 of PCP for initiating motor incoordination was 13.8mg/kg and the LD50 of PCP was estimated to be 78mg/kg. The daily administration of PCP, ranging from 10mg/kg to 40mg/kg, i.p., caused a gradual reduction of the duration of motor incoordination. The degree of tolerance development was observed to be in a dose-dependent fashion. 7 references. (Author abstract)

001620 Fonberg, Elzbieta; Kasicki, Stefan; Korczynski, Renard. Dept. of Neurophysiology, Nencki Institute of Experimental Biology, Warsaw, Poland **Electromyographic assessment of spinal reflexes in experimentally depressed dogs treated with antidepressants.** Acta Neurobiologiae Experimentalis. 40(3):651-663, 1980.

The electromyographic (EMG) assessment of spinal reflexes in experimentally-depressed dogs treated with antidepressants is described. In seven mongrel dogs, experimental depression was evoked by bilateral electrolytic lesions in lateral hypothalamus and/or dorsomedial amygdala. The effects of tricyclic antidepressants on general mood, spinal reflexes (recorded by EMG), and heartrate were tested. The reactivity to most external stimuli was increased and general depression was slightly reduced. 38 references. (Author abstract modified)

001621 Fredericks, Alice B.; Benowitz, Neal L. Div. of Clinical Pharmacology 1089 M, University of California, San Francisco, CA 94143 **An abstinence syndrome following chronic administration of delta9-tetrahydrocannabinol in rhesus monkeys.** Psychopharmacology. 71(2):201-202, 1980.

Delta9-tetrahydrocannabinol (THC) was given to chaired, chronically-catheterized male rhesus monkeys at the rate of 0.5mg/kg i.v. every 6 hours for 3 weeks to examine tolerance and abstinence to THC. The animals appeared heavy lidded, immobile, and unresponsive after the first injection, but tolerance developed during the 3 weeks of THC administration. When THC was discontinued, the animals showed an abstinence syndrome consisting of increases in gross movement, eye contact, and tooth baring. 9 references. (Author abstract modified)

001622 Freed, William J.; Weinberger, Daniel R.; Bing, Lloyd A.; Wyatt, Richard Jed. Laboratory of Clinical Psychopharmacology, Div. of Special Mental Health Research, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Neuropharmacological studies of phencyclidine (PCP)-induced behavioral stimulation in mice.** Psychopharmacology. 71(3):291-297, 1980.

The behavioral stimulation induced by phencyclidine (PCP) in female Swiss-Webster mice was blocked by chlorpromazine and clozapine, but not by haloperidol, reserpine, and alpha-methyl-p-tyrosine. The GABA agonists imidazole acetic acid and muscimol blocked PCP, but dipropylacetic acid, baclofen, and diazepam were ineffective. High doses of yohimbine and methysergide blocked PCP, but other drugs with comparable alpha-adrenergic and serotonergic blocking properties did not. Cholinergic, anticholinergic, beta-noradrenergic, opiate, nonspecific sedative, and convulsant drugs were also ineffective. Results suggest that chlorpromazine, clozapine, yohimbine, and methysergide block PCP through a shared mechanism distinct from their primary known modes of action. 38 references. (Author abstract modified)

001623 Fregly, Melvin J.; Connor, Thomas M.; Kikta, Dianne C.; Threatte, Rose M. Dept. of Physiology, University of Florida, College of Medicine, Gainesville, FL 32610 **Dipsogenic effect of L-5-hydroxytryptophan in rats.** Brain Research Bulletin. 5(6):719-724, 1980.

The dipsogenic effect of L-5-hydroxytryptophan (5HTP), the precursor of serotonin, in rats was examined. Peripheral administration of increasing doses of this compound increased water intake in a dose-dependent fashion. Peripheral administration of other analogs of tryptophan, including d-tryptophan, l-tryptophan, and acetyltryptophan, failed to affect water intake at a dose at which 5HTP induced maximal drinking (25mg/kg). The dipsogenic effect of melatonin, one of the metabolites of serotonin, was also tested. At any of six different doses, melatonin failed to affect water intake in the rat. The mechanisms by which 5HTP induces drinking is not known with certainty, but could involve its conversion to serotonin, a known dipsogenic agent. 13 references. (Author abstract modified)

001624 Freund, J. L.; Freund, D.; Hoffmann, R.; Glanzmann, P.; Kahlau, F. Inst. fur Arbeitsphysiologie und Rehabilitationsforschung, Philipps-Universitat, Ketzerbach 21 1/2, D-3550 Marburg/Lahn, West Germany /**The behavior of rats in the open field without stress, under acute and persisting influence of imipramine and tranylcypromine as well as on the individual reaction type (emotive and non-emotive).**/ Uber das Verhalten der Ratten im Open Field ohne Belastung, unter akuter und langer andauernder Wirkung von Imipramin und Tranylcypromin sowie uber Abhangigkeiten vom Reaktionstyp (emotive und nichtemotive Tiere). Arzneimittel-Forschung. 29(8):1150-1154, 1979.

The acute and prolonged effects of imipramine and tranylcypromine were studied in 30 emotive and 30 nonemotive mature male Wistar rats to determine if the drugs differentially affect behavior in these two reaction types. The drugs changed the typical behavior of the rats in the open field each in a different manner. Acute doses of imipramine inhibit symptoms of anxiety, as well as exploratory behavior, so that Ss appear totally disinterested in the environment. This finding confirms the assumed central nervous suppressing effects mentioned in the literature. Single doses of tranylcypromine had effects similar to those for imipramine, but long-term use resulted in a vitalization of behavior: symptoms of anxiety remain inhibited and exploratory behavior becomes dominant. Both drugs produce a flattening of behavior, and the original behavioral differences without stress disappear. Prolonged use of tranylcypromine makes emotive rats totally nonemotive. 18 references. (Journal abstract modified)

001625 Friedman, Howard J.; Bass, Michael B.; Lester, David. California School of Professional Psychology, 1900 Addison St., Berkeley, CA 94704 **Ethanol-induced analgesia in rats selectively bred for ethanol sensitivity.** Pharmacology Biochemistry and Behavior. 13(6):773-776, 1980.

Two rat lines selectively bred for ethanol-induced depression of locomotor activity were studied for ethanol-induced analgesia. The effects of ethanol on startle amplitude, extent of overt movements, and incidence of audible vocalizations in response to intermittent, noncontingent foot shock were investigated. All three responses were dose dependently depressed by ethanol, and to a greater extent in the most affected line (MA) than in least affected (LA) rats. Ethanol-induced response decrements were reinstated at higher shock intensities, indicating a sensory (i.e., analgesic) rather than a motoric or analgesic basis for these effects. Genes which influence ethanol's motoric effects might, in part, influence sensitivity to its sensory effects. 20 references. (Author abstract)

001626 Frischknecht, Hans R.; Sieber, Barabara; Waser, Peter G. Institute of Pharmacology, University of Zurich, Gloriastrasse 32, CH-8006 Zurich, Switzerland **Behavioral effects of hashish in mice: II. Nursing behavior and development of the sucklings.** Psychopharmacology. 70(2):155-161, 1980.

The effects of hashish extract on nursing behavior of dams and the development of mouse pups were investigated. Adult mice were treated from parturition to weaning of their first litter with a hashish extract. Oral administration of 20mg delta9-tetrahydrocannabinol/kg three times a week decreased the weight gain of pups from days 3 to 6 and 6 to 10 significantly, resulting in about 15% lower bodyweights on days 6 and 10 compared with control sucklings. On day 3, 1.5 to 2.0 hrs after the second application of hashish extract, a decrease showed in the mother's locomotive and nonsocial activities and indicated at least transient impairment of the maternal behavior. By day 10, after the fifth administration of hashish extract, a partial tolerance occurred, with normal care for the young, but still decreased nonsocial activites of the drugged dams. 18 references. (Author abstract modified)

001627 Gale, Karen; Iadarola, Michael. Dept. of Pharmacology, Georgetown University School of Medicine, Washington, DC 20007 **Drug-induced elevation of GABA after intracerebral microinjection: site of anticonvulsant action.** European Journal of Pharmacology. 68(2):233-235, 1980.

Intracerebral microinjection of the GABA transaminase inhibitor gamma-vinyl GABA (GVG) provided long-lasting protection against maximal electroshock seizures in male Sprague-Dawley rats. The anticonvulsant effect was associated with an increase in GABA in the midbrain reticular formation. Results suggest that GABAergic synapses in the midbrain may be involved in the physiological and pharmacological control of the propagation of seizure activity. 4 references.

001628 Gallagher, Michela; Kapp, Bruce S. Dept. of Psychology, University of Vermont, Burlington, VT 05405 **Amygdala opiate sensitive mechanisms influence fear motivated responses and memory processes for aversive experiences. (Unpublished paper).** Research Report, NIMH Grant R01-MH-32292, 1979. 23 p.

The effects of manipulating opiate activity within the amygdala of rats on retention of passive avoidance conditioning were investigated. It was found that intracranial injections of opiate agents into the amygdala complex of rats alter retention of passive avoidance conditioning. Administration of the opiate agonist, levorphanol, immediately following conditioning impaired retention measured 24 hours later. This effect was observed to be dose-dependent, stereospecific, and blocked by concurrent administration of the opiate antagonist naloxone. In addition, administration of naloxone alone immediately following conditioning produced a dose-dependent facilitation of retention. The effects of both levorphanol and naloxone administration were time-dependent because administration of either agent 6 hours following conditioning did not significantly alter retention of passive avoidance conditioning. These results support a role for amygdala opioid peptides in memory processes for an aversive experience. The results of other research are presented which demonstrate that opiate injections into the central nucleus of the amygdala complex alter the acquisition of a fear-motivated classically-conditioned heartrate response in rabbits. It is suggested that the effects of opiate manipulation within the central nucleus of the amygdala on aversively conditioned heartrate responding may be due to alterations in the arousal of fear. The possibility that opiate sensitive mechanisms within the central nucleus provide a common substrate for the effects of opiates on memory processes and the regulation of emotional states is discussed. 47 references. (Author abstract modified)

001629 Gardner, Eliot L.; Zukin, R. Suzanne; Makman, Maynard H. Dept. of Psychiatry, Albert Einstein College of Medicine, Bronx, NY 10461 **Modulation of opiate receptor binding in striatum and amygdala by selective mesencephalic lesions.** Brain Research. 194(1):232-239, 1980.

The effects of radio frequency thermocoagulative treatment of 6-hydroxydopamine lesions of medial or lateral portions of the substantia nigra on enkephalin receptor binding in the striatum and amygdala were studied in male Sprague-Dawley rats. In animals with medially placed unilateral nigral lesions, which showed contraversive rotation in response to apomorphine, the specific binding of 3H-D-ala2,met5-enkephalin (3H-DALA) was decreased in the striatum and in the amygdala of the lesioned side. In animals with laterally placed nigral lesions and ipsiversive rotational responses to apomorphine, specific 3H-DALA binding was increased in the striatum and amygdala of the lesioned side. Results are discussed in relation to the possible localization of opiate receptors on forebrain dopamine axon terminals. 48 references.

001630 Gauron, Eugene F.; Rowley, Vinton N. Dept. of Psychiatry, University of Iowa, Iowa City, IA 52242 **Critical periods for diphenylhydantoin and phenobarbital administration during gestation.** Psychological Reports. 47(3, Part 2):1163-1166, 1980.

Pregnant female albino rats were randomly assigned to one of three groups which were administered either 15 mg/kg diphenylhydantoin, 5 mg/kg phenobarbital, or an equal volume of distilled water. All administrations occurred daily in one of four time frames: days 1 to 7, days 8 to 14, days 15 to birth, days 1 to birth. At 75 days of age one male and one female offspring from 48 different litters were tested on avoidance conditioning Few birth defects were noted in the offspring, and abnormalities were not noted with regard to physical development. The results of avoidance conditioning testing indicate that the administration of diphenylhydantoin during the third period of pregnancy and the administration of phenobarbital during the first period were most influential in affecting learning in a detrimental direction. Caution is advised in the usage of these drugs in pregnancy. 5 references. (Author abstract)

001631 Gebhart, G. F.; Sherman, Arnold D.; Lewis, Vahn A. Dept. of Pharmacology, University of Iowa, Iowa City, IA 52242 **A signal detection analysis of centrally active drugs in mice.** Life Sciences. 27(25&26):2633-2638, 1980.

A signal detection procedure was employed to evaluate 10 drugs for analgetic efficacy using both a conventional analgesiometric test involving no training (tail flick) and a minimal training situation (platform escape task). The signal detection parameters D' and CR were found to provide a more complete view of the effects of the agents tested than did traditional threshold measurement. Morphine, ethanol, and aspirin all significantly reduced D' in the tail flick procedure while only morphine similarly reduced D' in the platform escape task. 5 references. (Author abstract modified)

001632 Gellert, Vance F.; Sparber, Sheldon B. Sparber: Dept. of Pharmacology, University of Minnesota, 105 Millard Hall, 435 Delaware St. S.E., Minneapolis, MN 55455 **Effects of morphine withdrawal on food competition hierarchies and fighting behavior in rats.** Psychopharmacology. 60(2):165-172, 1979.

The effects of chronic morphine administration and morphine withdrawal on competitive and fighting behaviors in rats were studied in a novel paradigm. Fixed-ratio 20 (FR20) lever-pressing for food presentation was stabilized before placing pairs of rats, matched by response rate and bodyweight, in the behavioral testing chambers. Initially, overt fighting occurred, but in 60% of the pairs it dissipated within several sessions, accompanied by the development of stable dominant submissive responding hierarchies. Chronic morphine administration and subsequent withdrawal in one or both members of the pairs led to disruptions or reversals in the distribution of responding and to small increases in fighting. These effects were seen as early as 12 hours after the second dose of morphine and, in some pairs lasted at least 28 days after morphine was withdrawn. It is concluded that change in so-called appetite for food is not an important determinant of the hierarchical changes observed during protracted withdrawal. 21 references. (Author abstract modified)

001633 Gewacke, Marilyn Ann. State University of New York at Binghamton **Large doses of vitamins and behavioral consequences. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2319-B, 1980. Ann Arbor, Univ. Microfilms No. 8027551, 141p., 1980.

A series of animal studies designed to elucidate the relationship between relatively large doses of pyridoxine or thiamine and specific behaviors are presented. Assessment techniques included ambulation, water maze performance, temperature preferences, and electroconvulsive seizure thresholds. Subjects were 168 male mice from 6 to 8 weeks olds. There was a tendency toward increased activity 1 to 2 weeks after injections began. The thiamine-treated animals showed an initial increase and then a significant decrease (after 4 weeks) in ambulation scores. The thiamine treated animals also showed faster swimming times and both thiamine and pyridoxine increased seizure thresholds. It is concluded that while some behaviors were sensitive to injections of pyridoxine and thiamine, it was not possible to assess whether these behavioral changes were beneficial or harmful to the animals. (Journal abstract modified)

001634 Geyer, Mark A.; Petersen, Lyle R.; Rose, Gary J. Dept. of Psychiatry, School of Medicine, University of California, San Diego, La Jolla, CA 92093 **Effects of serotonergic lesions on investigatory reponding by rats in a holeboard.** Behavioral and Neural Biology. 30(2):160-177, 1980.

The effects of serotonergic lesions on the frequency and typical durations of nose pokes by rats into holes in a holeboard were examined with male Sprague-Dawley rats. Frequency and duration were markedly increased by electrolytic lesions of the median raphe nucleus and only slightly increased by lesions of the dorsal raphe nucleus. These lesions reduced hippocampal and striatal serotonin, respectively. Comparable depletions of forebrain serotonin produced in infusions of the neurotoxin, 5,7-dihydroxytryptamine, into the lateral ventricle, the hippocampus, or the median raphe nucleus had no significant effect on behavior in the holeboard. Results suggest that the effects of electrolytic raphe lesions on behavioral measures of reactivity are better related to depletions of forebrain serotonin than are the effects of these lesions on measures of activity or investigatory behavior. An additional experiment demonstrates that the reductions in holeboard responding produced by either the hallucinogen, d-lysergic acid diethylamide, or the dopaminergic agonist, apomorphine, are unaltered by either electrolytic or neurotoxic lesions of the ascending serotonergic pathways. The effects of these drugs on investigatory responses in a holeboard appear to be independent of their effects on central serotonergic systems. 43 references. (Author abstract modified)

001635 Golda, V.; Petr, R.; Suba, P. Dept. of Neurosurgery, Medical School UK, Hradec Kralove, Czechoslovakia **Effect of bromocriptine on exploratory activity, brain monoamines and plasma corticosterone in the normotensive, genetically hypertensive and/or hypertensive obese rats.** Activitas Nervosa Superior. 22(3):207-208, 1980.

The effects of bromocriptine on the telencephalic and hypothalamic brainstem noradrenaline, dopamine, and serotonin levels, exploratory activity, and plasma corticosterone were traced in the normotensive, genetically-hypertensive, and/or hypertensive obese rats at the age of 8 to 12 months. Bromocriptine dissolved in drinking water was administered during a three week period at the following concentrations: 0.5mg/100ml, during the first week, and 1.0/100ml during the second and third weeks. Bromocriptine effects on brain catecholamines were found to be sex and strain dependent. 1 reference.

001636 Gordon, John H. Dept. of Pharmacology, Chicago Medical School, 2020 West Ogden Avenue, Chicago, IL 60612 **Modulation of apomorphine-induced stereotypy by estrogen: time course and dose response.** Brain Research Bulletin. 5(6):679-682, 1980.

The time course and dose response characteristics of the modulation of apomorphine-induced stereotypy by estrogen were investigated. The effects of estrogen (estradiol benzoate; EB) in ovariectomized rats were indicative of a dose-related suppression of apmorphine induced stereotypy at 24 hours after the last dose of EB. However, at 48 hours after the last dose of EB, the apomorphine-induced stereotypy was enhanced in those animals that received EB at 100mcg/kg for 3 days. Results indicate that estrogen can suppress dopamine and/or dopamine agonist potency 24 hours after the last dose of estrogen. The time delay and the dose dependence of the enhanced response to dopamine agonists are indicative of a withdrawal phenomenon, suggesting the possibility that the role of endogenous estrogen is to suppress dopaminergic function. 24 references. (Author abstract modified)

001637 Gormezano, I; Harvey, John A.; Aycock, Ellen. Dept. of Psychology, University of Iowa, Iowa City, IA 52242 **Sensory and associative effects of LSD on classical appetitive conditioning of the rabbit jaw movement response.** Psychopharmacology. 70(2):137-143, 1980.

Three experiments were conducted to determine the effects of LSD in classical appetitive conditioning of the rabbit jaw movement response (JMR). In experiment 1, LSD significantly enhanced the acquisition of conditioned responses (CRs). Experiments 2 and 3 were conducted to determine whether LSD's enhancement of conditioning could have arisen from its altering the sensory processing of either the CS or UCS, or both. It is

concluded that the enhancing effect of LSD on the acquisition of CRs is attributable, at least in part, to the drug's enhancement of the sensory processing of the CS. 27 references. (Author abstract modified)

001638 Grijalva, Carlos V. Dept. of Psychology, University of California, Los Angeles, CA 90024 **Aphagia, gastric pathology, hyperthermia, and sensorimotor dysfunctions following lateral hypothalamic lesions: effects of insulin pretreatments.** Physiology & Behavior. 25(6):931-937, 1980.

The effects of insulin pretreatment on the aphagia, gastric pathology, hyperthermia, and sensorimotor dysfunctions which follow lateral hypothalamic (LH) lesions were investigated. Insulin pretreatments were found to shorten the period of postoperative aphagia and to reduce, but not prevent, the occurrence of glandular gastric pathology. In addition, insulin did not prevent the hyperthermia or attenuate the severity of sensorimotor dysfunctions. Groups of LH damaged rats pretreated with either insulin or saline and allowed to recover initial feeding behaviors displayed significant reductions in core temperature and less gastric pathology than a group of LH rats also pretreated with saline but which was sacrificed while still aphagic. Furthermore, LH animals which ate, did so in the presence of rather pronounced sensorimotor abnormalities. These findings suggest that aphagia and sensorimotor dysfunctions induced by LH lesions can be dissociated. They further suggest that viscero/metabolic disorders may play an important role in the initial stages of the LH syndrome, and indicate that insulin may influence recovery of feeding behaviors by affecting peripheral systems as well as CNS functions. 38 references. (Author abstract modified)

001639 Grilly, David M.; Genovese, Raymond F.; Nowak, Michael J. Cleveland State University, Cleveland, OH 44115 **Effects of morphine, d-amphetamine, and pentobarbital on shock and light discrimination performance in rats.** Psychopharmacology. 70(2):213-217, 1980.

The effects of 2mg/kg and 4mg/kg morphine sulfate, 0.5mg/kg and 1.0mg/kg d-amphetamine sulfate and 6mg/kg and 12mg/kg pentobarbital sodium were tested in rats in two different discrete trial, two choice discrimination tasks. The discriminative stimuli for one task were high and low intensity shocks. In the order, correct choices were signaled by the position of a brief light flash. Morphine significantly disrupted performance of both tasks, with more reliable disturbances ocurring in the shock discrimination animals. Pentobarbital, while exerting noticeable effects on gross motor behavior, had little effect on discrimination performance; d-amphetamine was disruptive of discrimination performance in some animals only. Results indicate that much of the effect of relatively low doses of morphine on the shock discrimination performance of rats may be due not to its putative specific antinonciceptive properties, but to alterations in conceptual/judgmental processes or decreases in motivation (e.g., hunger) unrelated to pain. 20 references. (Author abstract modified)

001640 Gugushvili, L. N.; Chankotadze, I. Sh. no address /**The effect of phrenolon on delayed reactions in lower monkeys.**/ Vliyaniye frenolona na otsrochennyye reaktsii u nizshikh obes'yan. Soobshcheniya Akademii Nauk Gruzinskoy SSR. 98(1):157-160, 1980.

The effect of phrenolon on delayed reactions in lower monkeys was studied in relation to its effect on short-term image memory. Two Papio-Hamadryas and 2 Macaca rhesus monkeys were studied under conditions of free movement, using the method of delayed reactions with the choice of six screens. Results show that intramuscular administration of 0.05 to 0.08mg/kg phrenolon causes a statistically significant decrease of the period of approach to the feeding place, and increases the percentage of correct decisions, causing no particular changes in the animal's general behavior. Injection of 0.1 to 0.16mg/kg phrenolon considerably lengthens the time of approach, with a relatively low percentage of correct decision, causing impairment of behavioral motor reactions. 5 references. (Journal abstract modified)

001641 Halliwell, J. V.; Kumar, R. Dept. of Pharmacology, School of Pharmacy, Brunswick Square, London WC1, England **Morphine dependence and dopaminergic activity: tests of circling responses in rats with unilateral nigral lesions.** British Journal of Pharmacology. 70(4):545-554, 1980.

Male hooded rats with unilateral electrolytic lesions of the substantia nigra showed dose-related, ipsilateral circling responses to apomorphine. Acute morphine did not elicit circling behavior, but rats showed a progressive tendency to walk toward the side of the lesion as morphine tolerance developed. The effects of apomorphine and morphine were additive, but responses to apomorphine were enhanced during morphine withdrawal. It is suggested that morphine dependence does not alter the sensitivity of striatal dopamine receptors and that the increased response to apomorphine during morphine abstinence reflects changes in other striatal transmitter systems. 55 references. (Author abstract modified)

001642 Haracz, John L.; Tseng, Liang-Fu. Tseng: Dept. of Pharmacology and Toxicology, Medical College of Wisconsin, Milwaukee, WI 53226 **Reduction of dopaminergic supersensitivity by a single dose of amphetamine.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):131-133, 1980.

Chronic administration of haloperidol (2mg/kg/day i.p. for 14 days) markedly enhanced the stereotyped behavior induced by apomorphine in male Sprague-Dawley rats. This behavioral supersensitivity was reduced by a single injection of d-amphetamine (10mg/kg i.p.) 2 days after the haloperidol injections were terminated. This reduction in neuroleptic induced behavioral supersensitivity lasted for at least 3 days after the amphetamine injection. 11 references. (Author abstract modified)

001643 Haracz, John L.; Tseng, Liang-Fu. Dept. of Pharmacology and Toxicology, Medical College of Wisconsin, Milwaukee, WI 53226 **The short- and long-termed effects of beta-endorphin on the opiate abstinence syndrome in rats.** Communications in Psychopharmacology. 4(3):219-224, 1980.

In morphine dependent male Sprague-Dawley rats, naloxone precipitated withdrawal behavior was suppressed acutely, but not chronically, by a single intraventricular (i.v.t.) injection of beta-endorphin. Naloxone antagonized the cataleptic effect of beta-endorphin without reversing its acute withdrawal suppressing effect. Animals given naloxone 19 hours after i.v.t. injection of 20mcg beta-endorphine, 40mcg morphine sulfate, or saline showed no differences in chronic withdrawal behavior or weight loss. 21 references. (Author abstract modified)

001644 Hardy, Cheryl; Panksepp, Jaak; Rossi, John, III; Zolovick, A. J. Dept. of Psychology, Bowling Green State University, Bowling Green, OH 43403 **Naloxone facilitates amygdaloid kindling in rats.** Brain Research. 194(1):293-297, 1980.

Naloxone facilitated the development of kindled behavioral seizures in female Wistar rats without markedly altering EEG indices of seizure activity in the stimulated amygdala. Rats treated with naloxone during the kindling process exhibited class-5 seizures before the stimulation that produced the afterdischarge of the longest duration, whereas control rats exhibited generalized seizures on or after the day of peak afterdischarge duration. Results suggest that endogenous opioid peptides may normally

function to decrease the susceptibility of the brain to epileptogenic activity. 23 references.

001645 Harris, R. A.; Snell, Diane. Dept. of Pharmacology, University of Missouri School of Medicine, Columbia, MO 65212 **Interactions between naltrexone and non-opiate drugs evaluated by schedule-controlled behavior.** Neuropharmacology. 19(11):1087-1093, 1980.

The interaction of naltrexone with seven nonopiate drugs was studied in male Long-Evans rats responding under a multiple fixed-interval 5-minute, fixed-ratio 30 response schedule of food presentation. Cocaine, amfonelic acid, bromocriptine, chlorpromazine, pimozide, and ethanol produced dose-dependent decreases in the average rate of responding. Large doses of d-amphetamine also decreased responding, but small doses increased responding. Naltrexone (1mg/kg) did not alter responding when given alone, but potentiated the rate decreasing effects of the other drugs and antagonized the rate increasing effect of d-amphetamine. Results are discussed in relation to the effects of narcotic antagonists on dopaminergic systems. 28 references. (Author abstract modified)

001646 Harrison-Read, P. E.; Steinberg, Hannah. Dept. of Pharmacology, Medical College of St. Bartholomew's Hospital, Charterhouse Square, London EC1M 6BQ, England **Imipramine normalizes naturally-occurring and drug-induced differences in the exploratory activity of rats.** British Journal of Pharmacology. 70(2):277-285, 1980.

In female hooded Lister rats, naturally-occurring individual differences in locomotion and rearing in a Y-maze were abolished by pretreatment with imipramine. Imipramine also abolished changes in exploratory activity produced by drugs that alter brain 5-hydroxytryptamine metabolism; p-chlorophenylalanine increased and DL-5-hydroxytryptophan decreased the fall in activity over the trial in saline-treated rats, but not in imipramine-treated rats. The normalizing effects of imipramine on rat behavior may be analogous to its therapeutic effects in human depressive disorders. 28 references. (Author abstract modified)

001647 Hassmannova, J.; Myslivecek, J.; Josifko, M.; Vostalova, V.; Klimova, H. Institute of Hygiene and Epidemiology, Srobarova 48, 10042 Prague 10, Czechoslovakia **Two-way avoidance learning under the influence of nootropic drugs.** Activitas Nervosa Superior. 22(3):196-197, 1980.

The effects of nootropic drugs (piracetam and pyritinol) on two-way avoidance learning in a shuttlebox were investigated in 94 rats. Rats underwent 50 trials in five blocks of 10 trials. Three groups of rats were matched for gender, strain, and intensity of shocks, and injected with piracetam, pyritinol, or saline. No significant effects of the drugs were found. Saline injection was found to result in a significant increase in avoidance reactions. 5 references.

001648 Hatchell, Patricia C.; Collins, Allan C. Dept. of Biology, University of Missouri-Kanasas City, Kansas City, MO 64110 **The influence of genotype and sex on behavioral sensitivity to nicotine in mice.** Psychopharmacology. 71(1):45-49, 1980.

The influences of genotype and sex on spontaneous motor activity in a Y-maze after nicotine administration and on nicotine concentrations in liver and brain were assessed in three inbred mouse strains. The rank order of liver nicotine elimination rate in these strains was found to be C57 greater than C3H equals DBA for females and DBA greater than C3H equal C57 for males. Within the C57 and C3H strains, females eliminated nicotine significantly faster than males, while DBA females and males eliminated nicotine at similar rates. The rank order of motor depression at early time points after nicotine administration was found to be DBA equal C57 greater than C3H for both males and females. Females of all three strains demonstrated less sensitivity to nicotine's depressant effects than males. There did not appear to be any consistent association between rate of liver nicotine elimination and brain nicotine content may account for some of the observed behavioral effects. These data suggest that strain and sex differences in tissue sensitivity to nicotine are of primary importance. (19 references. (Author abstract modified)

001649 Havemann, U.; Winkler, M.; Kuschinsky, K. Dept. of Biochemical Pharmacology, Max-Planck-Institut for Experimental Medicine, D-3400 Gottingen, West Germany **Opioid receptors in the caudate nucleus can mediate EMG-recorded rigidity in rats.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(2):139-144, 1980.

Unilateral intrastriatal injection of morphine (7.5 to 30mcg) in male albino Wistar rats induced a continuous electromyographical (EMG) activity in the ipsilateral gastrocnemius soleus muscle. This effect could be antagonized by systemic administration of naloxone (1 or 2mg/kg). Intrastriatal injections of D-ala2-met5-enkephalinamide (3mcg) and levorphanol (22.5mcg) also induced EMG activity, but dextrorphan was ineffective. The EMG activity observed after systemic administration of morphine (15mg/kg) was antagonized by intrastriatal injection of naloxone (5mcg). Results suggest that the head of the caudate nucleus plays an important role in mediating the rigidity observed after systemic administration of opioids. 28 references. (Author abstract modified)

001650 Heikkila, Richard E.; Cabbat, Felicitas S.; Duvoisin, Roger C. Mount Sinai School of Medicine, Fifth Ave. and 100th St., New York, NY 10029 **Motor activity and rotational behavior after analogs of cocaine: correlation with dopamine uptake blockade.** Communications in Psychopharmacology. 3(5):285-290, 1979.

The ability of two derivatives of cocaine, Win-35,065 and Win-35,140, to inhibit uptake of 3H-dopamine into Sprague-Dawley rat neostriatal slices, to stimulate motor activity in mice, and to cause rotational behavior in rats with unilateral 6-hydroxydopamine lesions of the substantia nigra was tested. Win-35,065 was considerably more potent that Win-35,140 and cocaine in all three tests. Since Win-35,065 differs from Win-35,140 only in the spatial arrangement of an ester group and hydrogen atom on a single carbon atom, these results emphasize the importance of substitutions in cocaine derivatives. 8 references. (Author abstract modified)

001651 Herling, Seymore; Valentino, Rita J.; Winger, Gail D. Dept. of Pharmacology, University of Michigan, Ann Arbor, MI 48109 **Discriminative stimulus effects of pentobarbital in pigeons.** Psychopharmacology. 71(1):21-28, 1980.

The discriminative stimulus effects of pentobarbital in pigeons were investigated. Pigeons were trained to discriminate the i.m. injection of pentobarbital from saline in a task in which 20 consecutive pecks on one of two response keys produced access to mixed grain. Pentobarbital produced a dose related increase in the percentage of the total session responses that occurred on the pentobarbital appropriate key. The effects of concomitant administration of bemegride, benzodiazepines, barbiturates, narcotics, and anticonvulsants on this discrimination are discussed. Muscimol, a direct GABA agonist, and baclofen, a structural analogue of GABA, also failed to produce pentobarbital appropriate responding. Ketamine, dextrorphan, and ethanol produced intermediate levels of pentobarbital appropriate responding, suggesting that the discriminative effects of these drugs may be somewhat like those of pentobarbital. 40 references. (Author abstract modified)

001652 Hernandez, Linda L.; Appel, James B. Appel: Behavioral Pharmacology Laboratory, Dept. of Psychology, University of South Carolina, Columbia, SC 29208 **An analysis of some perceptual effects of morphine, chlorpromazine, and LSD.** Psychopharmacology. 60(2):125-130, 1979.

Perceptual effects of morphine, chlorpromazine (CPZ), and LSD were investigated in rats. Male albino rats were trained to detect either a pure tone or a weak footshock embedded in white noise by utilizing a discrete trial, two choice, successive discrimination procedure. The effects of morphine, CPZ, and LSD on several measures of performance were then analyzed. Morphine produced a nonspecific decrease in accuracy of discrimination on trials when the stimulus was presented as well as on trials when no stimulus occurred. Morphine was also followed by dose-dependent decreases in speed to initiate trials and by increases in intersubject variability. CPZ caused a decrease in accuracy only on no stimulus trials and, like morphine, decreased speed to initiate trials. LSD decreased overall accuracy in a nospecific manner and decreased speed by producing periods of nonresponding. 25 references. (Author abstract modified)

001653 Hitzemann, Robert; Wu, Jerwin; Hom, Dennis; Loh, Horace. Dept. of Psychiatry, Psychobiology Lab., University of Cincinnati, College of Medicine, 231 Bethesda Ave., Cincinnati, OH 45267 **Brain locations controlling the behavioral effects of chronic amphetamine intoxication.** Psychopharmacology. 72(1):93-101, 1980.

Brain locations controlling the behavioral effects of chronic amphetamine intoxication were investigated via microinjection techniques. These studies indicate that both the augmentation and attenuation of nonstereotyped ambulation observed during a 4-day period of d-amphetamine administration are generated in the nucleus accumbens. The augmentation of stereotyped behaviors was generated from the caudate nucleus. Chronically treated animals who were administered 0.7mg/kg but not 1. 0mg/kg apomorphine showed augmented behavioral response. Chronic amphetamine treatment significantly decreased (3H) spiroperiodol binding in both the nucleus accumbens and caudate nucleus. However, no effect on the dopamine-stimulated adenyl cyclase was observed in either brain region. It is concluded that repeated d-amphetamine administration selectively augments and attenuates d-amphetamine-induced behaviors and that these selective effects are mediated by different dompamine systems. 37 references. (Author abstract modified)

001654 Hofer, Myron A. Dept. of Psychiatry, Montefiore Hospital, 111 East 210 Street, Bronx, NY 10467 **Effects of reserpine and amphetamine on the development of hyperactivity in maternally deprived rat pups.** Psychosomatic Medicine. 42(5):513-520, 1980.

The behavioral responses of maternally-deprived rat pups to reserpine and amphetamine were examined in 2-week-old infant rats kept at nest temperature and deprived from their mother for 24 hours. Pretreatment with reserpine at the time of separation prevented the development of hyperactivity over the ensuing 24 hr, whereas the same dose in mothered littermates had no residual effects on behavior the next day. Amphetamine produced dose-dependent increases in locomotion and rearing and decreases in self-grooming behavior, which were of comparable magnitude whether the pups were separated and kept warm, normally mothered, or separated at room temperature, a condition known to produce decreased activity levels. Cardiac rates were not affected by either drug; reserpine lowered respiratory rates slightly, amphetamine increased body temperature following behavior testing. Altered accumulation of catecholamines at presynaptic terminals is discussed as a possible neurochemical mechanism for behavior changes following maternal separation in this model system. 18 references. (Author abstract modified)

001655 Hoffmeister, Friedrich. Institut fur Pharmakologie, Bayer AG, Postfach 101709, D-5600 Wuppertal 1, West Germany **Influence of intravenous self-administered psychomotor stimulants on performance of rhesus monkeys in a multiple schedule paradigm.** Psychopharmacology. 72(1):41-59, 1980.

The influence of intravenous self-administered psychomotor stimulants on performance of rhesus monkeys in a multiple schedule paradigm was investigated. Rhesus monkeys were trained to complete three multiple schedules: 1) fixed interval (component 1); 2) variable interval (component 2); and 3) fixed ratio (component 3). Self-administration of psychomotor stimulants impaired the performance of animals and delayed completion of components 1 and 2, regardless of the contingencies governing the presentation of the components. Effects were strong with self-administration of phenmetrazine, moderate with self-administration of phenmetrazine, moderate with self-administration of cocaine and d-amphetamine, and weak with self-administration of fenetylline. 22 references. (Author abstract modified)

001656 Holmgren, Bjorn; Urba-Holmgren, Ruth. Depto. de Neurofisiologia, Centro Nacional de Investigacione Cientificas, Apartado 6990, Havana, Cuba **Interaction of cholinergic and dopaminergic influences on yawning behavior.** Acta Neurobiologiae Experimentalis. 40(3):633-642, 1980.

The possible interaction between cholinergic and dopaminergic influences in the induction of yawning behavior in the rat was investigated via several experimental approaches: comparison of the ontogeny of yawning behavior induced by physostigmine and apomorphine; simultaneous injection of both drugs; crossed blocking experiments, in which the action of the cholinomimetic agent was examined after injection of spiroperidol or apomorphine after scopolamine. No synergism on yawning behavior was observed by simultaneous injection of physostigmine and apomorphine. A tentative model of in-series organization of dopaminegic and cholinergic influences on yawning behavior is proposed. 23 references. (Author abstract modified)

001657 Huston, J. P.; Nef, B.; Papadopoulos, G.; Welzl, H. Institute of Psychology III, University of Dusseldorf, Universitatsstrasse 1, D-4000 Dusseldorf, West Germany **Activation and lateralization of sensorimotor field for perioral biting reflex by intranigral GABA agonist and by systemic apomorphine in the rat.** Brain Research Bulletin. 5(6):745-749, 1980.

Activation and lateralization of sensorimotor field for perioral biting reflex by an intranigral GABA agonist and by systemic apomorphine in the rat are described. In Experiment 1, unilateral injection of the GABA agonist, muscimol into the substantia nigra (SN) of rats elicited contraversive turning and a correlated transient asymmetry in responsiveness to tactile stimulation of the mouth area. On the side of the face contralateral to the injected SN, they responded stronger than on the ipsilateral side, and, furthermore, they responded to tactile stimulation with a withdrawal of the lip, followed by a vigorous biting of the probe. In Experiment 2, systemic injection of apomorphine also sensitized the perioral biting response to tactile stimulation. Unilateral injection into the SN of 6-hydroxydopamine blocked this response to stimulation of the side of the face ipsilateral to the lesion. The experiments demonstrate: 1) pharmacological control of sensorimotor neglect, the asymmetry being determined by the direction of turning; and 2) a possible neuropharmacological basis of the perioral biting reflex, which may be related to certain types of aggressive behaviors. 32 references. (Author abstract modified)

001658 Huygens, Patricia; Baratti, Carlos M.; Gardella, Javier L.; Filinger, Ester. Baratti: Catedra de Farmacologia Experimental, Facultad de Farmacia y Bioquimica, UBA, Junin 956, 5th Piso, 1113, Buenos Aires, Argentina **Brain catecholamines modifications. The effects on memory facilitation induced by oxotremorine in mice.** Psychopharmacology. 69(3):291-294, 1980.

The effects on memory of modification of brain catecholamines induced by oxotremorine were investigated in mice. After the administration of alpha-methyl-p-tyrosine methylester (alpha-MPT) by intracerebroventricular injection at doses that had no effect on retention, the immediate posttrial injection of oxotremorine did not enhance retention of a passive avoidance response. The employed dose of alpha-MPT reduced brain levels of norepinephrine by about 40% and those of dopamine by about 25%. Pretreatment with nialamide, which prevents the catecholamine depletion induced by alpha-MPT, counteracted the effects of alpha-MPT on the actions of oxotremorine on retention. These results suggest a participation of brain catecholamines on the actions of oxotremorine on retention and a possible interaction of cholinergic neurons with the catecholaminergic system in memory processes. 36 references. (Author abstract modified)

001659 Ikeda, Y.; Takano, N.; Matsushita, H.; Shiraki, Y.; Koide, T.; Nagashima, R.; Fujimura, Y.; Shindo, M.; Suzuki, S. Dept. of Pharmacology, Research Laboratories, Chugai Pharmaceutical Co., Ltd., 41-8, 3 Chome, Takada, Toshima-ku, Tokyo 171, Japan **Pharmacological studies on a new thymoleptic antidepressant. 1-(3-(dimethylamino)propyl) 5-methyl-3-phenyl-1H-indazole (FS-32).** Arzneimittel Forschung 29(3):511-520, 1979.

The pharmacological action of l-(3-(dimethylamino)propy1)-5-methyl-3-phenyl-1H-indazole (FS-32), a newly synthesized indazole derivative, was compared with imipramine in tests with mice, rats, dogs, guinea-pigs, rabbits, and monkeys. FS-32 showed anti-reserpine activity in a dose-dependent manner, whereas imipramine exhibited a bell-shaped dose-response pattern. Catecholaminergic potentiation was demonstrated, and the compound apparently acts qualitatively different from tricyclic antidepressants. A definite suppressive effect on isolation-induced fighting occurred, without affecting coordinated motor activity, and on the duration of afterdischarge eliciated by electrical stimulation to the amygdala or hippocampus, without producing a slow-wave pattern in the EEG. Similar effects on fighting behavior and the afterdischarge were shown under imipramine. FS-32 produced practically no peripheral anticholinergic action, while it antagonized central cholinergic activity. It tended to produce increased brain catecholamine content without MAO or COMT inhibitory activity. Norepinephrine uptake was inhibited less than by imipramine. It is concluded that FS-32 is clinically useful as an antidepressant possessing thymoleptic activities. 73 references. (Journal abstract modified)

001660 Infurna, Robert Noel. State University of New York at Binghamton **The influence of daily biological rhythmicity on the homing-behavior, psychopharmacological responsiveness, learning and retention of suckling rats. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2377-B, 1980. Ann Arbor, Univ. Microfilms No. 8027552, 144p., 1980.

The influence of daily biological rhythmicity on the behavioral competence of developing animals was assessed with five experiments with 583 rats. Four experiments utilized nest seeking (homing) as motivation for 7-day-old rat pups and demonstrated that both the motoric capabilities and psychopharmacological effects of d-amphetamine varied with a daily rhythm. Successful homing performance increased as the time of day of testing approached the middle of the dark phase and then declined as the time of testing approached the middle of the light phase. The final experiment investigated the influence of daily rhythmicity on the acquisition and retention of an amphetamine-induced odor aversion by manipulating the time of day pups were originally conditioned on postnatal day 7 and the time of day pups were tested on postnatal day 10. The time of day of conditioning determined the magnitude of an acquired odor aversion. The retention test performance was best among those pups tested at the time of day corresponding to that of their original training. Findings provide strong evidence for the view that daily biological rhythmicity exerts a reliable and important influence over various aspects of the behavior of developing animals including homing, psychopharmacological responsiveness, learning, and memorial processes. (Journal abstract modified)

001661 Iversen, Susan D.; Howells, R. B.; Hughes, R. P. Dept. of Experimental Psychology, Downing Street, Cambridge, England **Behavioral consequences of long-term treatment with neuroleptic drugs.** Advances in Biochemical Psychopharmacology. 24:305-313, 1980.

Three groups of studies of behavioral consequences of long-term treatment with neuroleptic drugs are reviewed: 1) the emergence of spontaneous abnormal movements in the rat after repeated depot injections of a phenothiazine, fluphenazine; 2) abnormal movements in the rhesus monkey associated with acute low dose d-amphetamine treatment; and 3) behavioral hypersensitivity to apomorphine seen during chronic fluphenazine treatment. Three factors have been identified which influence the balance state of the dopaminergic synapse: presynaptic hyposensitivity; postsynaptic hypersensitivity; and stress. All enhance normal behavior associated with the release of dopamine, appear to be synergistic, and may account for the abnormal movement syndromes associated with dopamine dysfunction. It is noted that an animal model of tardive dyskinesia requiring a shorter exposure to the primary drug (i.e., neuroleptic) could be of great value in testing the efficacy of treatments designed to prevent the development or reduce the severity of tardive dyskinesia. 15 references.

001662 Iwamoto, Edgar T.; Way, E. Leong. Dept. of Pharmacology, University of Kentucky, Lexington, KY 40536 **Opiate actions and catecholamines.** Advances in Biochemical Psychopharmacology. 20:357-407, 1979.

The relationship of central catecholamine containing systems to the actions of narcotic analgesics and endogenous opiate peptides is reviewed. Opiate actions on steady-state brain catecholamine concentrations, brain catecholamine turnover, catecholamine metabolism, catecholamine uptake and release, and catecholamine sensitive adenylate cyclase are reviewed. The interaction of catecholamines and opiates in neuroleptic receptor binding and in locomotor activity, stereotypy, and circling behavior suggests that opiates may act on the dopaminergic nigrostriatal pathway. Opiate effects on catalepsy and analgesia appear to reflect actions in the periventricular/periaqueductal gray regions. 489 references.

001663 Izquierdo, Ivan. Departmento de Bioquimica, Instituto de Biociencias, UFRGS (centro), 90000 Porto Alegre, RS, Brazil **Effects of a low and a high dose of beta-endorphin on acquisition and retention in the rat.** Behavioral and Neural Biology. 30(4):460-464, 1980.

The i.p. administration of naloxone (1.6mg/kg) or beta-endorphin (20mcg/kg) hindered acquisition of shuttle avoidance learning and of habituation of a rearing response to a tone in rats. The two treatments, however, were mutually antagonistic. A low dose of beta-endorphin (2mcg/kg) had no effect on acquisition. In the avoidance task, pre or posttraining administration of 2mcg/kg of beta-endorphin, and pretraining (but not

posttraining) administration of 20mcg/kg of the substance caused amnesia. This effect was reversed by the posttraining administration of naloxone (0.2mg/kg). The results suggest that there is an inverted-U dose response curve both for the effect of beta-endorphin on acquisition, and for the one on memory consolidation; that the latter is exerted mainly at the posttraining period; and that the two effects are interrelated. 7 references. (Author abstract)

001664 Izquierdo, Ivan; Souza, Diogo O.; Carrasco, Maria A.; Dias, Renato D.; Perry, Marcos L.; Eisinger, Sonia; Elisabetsky, Elaine; Vendite, Deusa A. Dept. de Bioquimica, Instituto de Biociencias, U. F. R. G. S. (centro), 90000 Porto Alegre, RS, Brazil **Beta-endorphin causes retrograde amnesia and is released from the rat brain by various forms of training and stimulation.** Psychopharmacology. 70(2):173-177, 1980.

The endogenous opiate peptide, beta-endorphin, was injected into rats immediately after training in shuttle avoidance task, and its effect on memory retention was evaluated in test sessions 24 hr later. The drug was found to cause retrograde amnesia. After training in any of four paradigms, there was a marked depletion of beta-endorphin immunoreactivity in the rest of the brain. It is concluded that there is a physiological amnesia mechanism mediated by beta-endorphin (and perhaps other opioid peptides as well), which is triggered by the nonassociative factors present in the various forms of learning. 24 references. (Author abstract modified)

001665 Jacquet, Yasuko F. Center for Neurochemisty, Rockland Research Institute, Ward's Island, New York, NY 10035 **Different behavioral effects following intracerebral, intracerebroventricular or intraperitoneal injection of naloxone in the rat.** Behavioural Brain Research. 1(6):543-546, 1980.

The different behavioral effects of intracerebral, intracerebroventricular, and intraperitoneal injections of naloxone in the rat were studied. Preliminary results suggest that naloxone may exert strikingly different behavioral effects depending on dose and route of administration, and confirm that opiate antagonism is only one of its many actions. The striking difference in behavior resulting from systemic or intracerebral periaqueductal gray naloxone administration may be due to a distribution factor, i.e., when naloxone is administered systemically, the naloxone achieves distribution throughout the CNS, reaching sites other than the morphine sensitive periaqueductal gray site. 12 references. (Author abstract modified)

001666 Jarbe, T. U. C.; McMillan, D. E. Dept. of Psychology, University of Uppsala, P.O. Box 227, S-751 04 Uppsala, Sweden **delta9-THC as a discriminative stimulus in rats and pigeons: generalization to THC metabolites and SP-111.** Psychopharmacology. 71(3):281-289, 1980.

In pigeons and male Sprague-Dawley rats trained to discriminate delta9-tetrahydrocannabinol (THC, 1.0mg/kg and 3.0 mg/kg), generalization to the THC occurred with 11-hydroxy metabolites of THC and with 11-dihydroxy-THC. A water-soluble derivative of THC (SP-111) also generalized the THC, but had a slower onset of action. Results demonstrate the importance of obtaining complete dose/effect determinations over time when using drug discrimination procedures to assess structure/activity relationships. 31 reference (Author abstract modified)

001667 Jones, R. S. G. Psychiatric Research Division, University Hospital, Saskatoon, Saskatchewan S7N 0X0, Canada **Enhancement of 5-hydroxytryptamine-induced behavioral effects following chronic administration of antidepressant drugs.** Psychopharmacology. 69(3):307-311, 1980.

The enhancement of 5-hydroxytryptamine (5-HT)-induced behavioral effects following chronic administration of antidepressant drugs was investigated. Behavioral signs of sleep in young chicks following systemic administration of 5-HT were used as an index of the action of the amine at central receptor sites. Imipramine, desipramine, amitryptiline, pizotifen, and mianserin given 39 min before 5-HT all reduced the duration of 5-HT-induced behavioral depression. Results suggest that the antidepressant drugs can block 5-HT receptors in CNS, and that chronic blockade resulting from repeated administration of the drugs results in an increase in number or sensitivity of 5-HT receptors. 25 references. (Author abstract modified)

001668 Joseph, James; Powell, D. A. Gerontology Research Center, NIA, Baltimore, MD 21224 **Peripheral 6-hydroxydopamine administration in the rabbit (Oryctolagus cuniculus): effects on Pavlovian conditioning.** Journal of Comparative and Physiological Psychology. 94(6):1114-1125, 1980.

The effects of 6-hydroxydopamine (6-OHDA) administration and adrenal enucleation on differential classical conditioning of somatic and cardiovascular changes in the rabbit were investigated. Heartrate and blood pressure conditioned responses (CRs) were relatively large decreases in rate and slight depressor responses, respectively, which were both attenuated by 6-OHDA administration and adrenal demedullation. Frequency of eye blink response to the reinforced conditioned stimulus was diminished by sympathetic interference during the middle sessions of conditioning, thus producing a decrement in eye blink discrimination. Electromyographic CRs were not affected by peripheral catecholamine reduction. The results are discussed in terms of the role of afferent autonomic feedback in influencing the acquisition of somatomotor behaviors. 38 references. (Author abstract modified)

001669 Kaakkola, Seppo. Dept. of Pharmacology, University of Helsinki, Siltavuorenpenger 10, SF-00170 Helsinki 17, Finland **Contralateral circling behaviour induced by intranigral injection of morphine and enkephalin analogue FK 33-824 in rats.** Acta Pharmacologica et Toxicologica. 47(5):385-393, 1980.

Morphine (0.625 to 109.0mcg) and the enkephalin analogue FK33-824 (1.25 to 40.0ng) both evolved contralateral circling behavior in female Wistar rats after injection into the substantia nigra. These effects were antagonized by naloxone or by lesion of the ipsilateral nigrostriatal pathway with 6-hydroxydopamine. The effects of d-amphetamine, haloperidol, pilocarpine, mecamylamine, atropine, nicotine, bicuculline, and strychnine suggested the opiate-induced contralateral circling was mediated by activation of the dopaminergic nigrostriatal pathway. 53 references. (Author abstract modified)

001670 Kaakkola, Seppo; Kaariainen, Ilpo. Dept. of Pharmacology, University of Helsinki, Siltavuorenpenger 10, SF-00170 Helsinki 17, Finland **Contralateral circling behaviour induced by intranigral injection of taurine in rats.** Acta Pharmacologica et Toxicologica. 46(4):293-298, 1980.

Unilateral intranigral injections of taurine (10 to 200mcg) induced dose-dependent contralateral circling behavior in female Wistar rats. Intranigral injection of isethionic acid, a metabolite of taurine, induced weak ipsilateral circling of short duration. Pretreatment with bicuculline or strychnine significantly inhibited the taurine-induced circling. The intensity of taurine-induced circling was decreased by 1mg/kg dose of haloperidol, but not by 0.5mg/kg. Pretreatment with atropine had no significant effect on circling. 36 references. (Author abstract modified)

001671 Karler, Ralph; Turkanis, Stuart A. Dept. of Pharmacology, University of Utah College of Medicine, Salt Lake City, UT 84132 **Subacute cannabinoid treatment: anticonvulsant activi-**

ty and withdrawal excitability in mice. British Journal of Pharmacology. 68(3):479-484, 1980.

The effects of subacute treatment with cannabidiol, delta9-tetrahydrocannabinol (THC), phenytoin, and phenobarbitone on anticonvulsant activity and withdrawal excitability were examined in male ICR mice. Tolerance to THC was observed in the maximal electroshock threshold test, but the anticonvulsant effects of the other drugs were not altered. In the 60Hz electroshock threshold test, tolerance developed to phenobarbitone and sensitivity to phenytoin increased. In the 6Hz electroshock threshold test, sensitivity to THC and cannabidiol increased and tolerance developed to phenobarbitone. Hyperexcitability was observed after withdrawal of THC and phenobarbitone, but not after withdrawal of the other drugs. The THC withdrawal hyperexcitability suggests that marihuana use may jeopardize the control of seizures in epileptics. 27 references. (Author abstract modified)

001672 Karson, Craig; Kleinman, Joel; Freed, William; Staub, Richard; Wyatt, Richard Jed. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Eye blinks. (Unpublished paper).** Washington, DC, NIMH, 1980. 2 p.

Various pharmacological agents were administered to four rhesus monkeys and the acute effect on eye blink rates was explored. Apomorphine, a dopamine agonist, increased the eye blink rate; but haloperidol pretreatment for 3 days completely abolished the apomorphine-induced increase in blink rates. Pargyline increased the mean blink rate; and beta-phenethylamine, given to the pargyline pretreated monkeys, further increased the blink rates. Apomorphine significantly increased blinking in nine cerebellectomized rats and seven normal rats. The data suggest that blinking is a phenomena mediated by central monoamines, particularly dopamine. An increase in blink rate may be a useful clinical index of increases in central monoamines caused by antidepressants. In schizophrenia, blink rates may help determine if there is altered receptor sensitivity to dopamine agonists in patients with normal ventricular size and may help to predict MAO activity in these patients. 4 references. (Author abstract modified)

001673 Kastin, Abba J.; Kostrzewa, Richard M.; Schally, Andrew V.; Coy, David H. V.A. Medical Center, 1601 Perdido St., New Orleans, LA 70146 **Neonatal administration of Met-enkephalin facilitates maze performance of adult rats.** Pharmacology Biochemistry and Behavior. 13(6):883-886, 1980.

The effects of neonatal administration of Met-enkephalin on maze performance of adult rats were studied. Newborn rats were injected during the first week of life with 80mcg/kg Met-enkephalin, delta-sleep-inducing peptide (DSIP), Pro-Leu-Gly-NH2 (MIF-1), or diluent. When tested 3 months later in a 12 choice maze for a reward of food, hungry rats injected neonatally with Met-enkephalin were found to run the maze faster and with fewer errors than did control Ss. DSIP and MIF-I did not improve performance in the maze, indicating that some specificity was incorporated in the effect. Tyrosine hydroxylase and choline acetyltransferase activity in several parts of the brain were not significantly different among the groups. Results extend previous observations of the persistence of central effects of peripherally injected Met-enkephalin from several minutes to three months, when administration occurs early in life. 13 references. (Author abstract modified)

001674 Kastin, Abba J.; Mauk, Michael D.; Schally, Andrew V.; Coy, David H. V.A. Medical Center, New Orleans, LA 70146 **Unusual dose-related effect of an endorphin analog in a complex maze.** Physiology & Behavior. 25(6):959-962, 1980.

The effects of (D-Ala2)-beta-endorphin on rats' performance in a complex maze were investigated. Hungry adult rats were tested in a 12 choice maze for their ability to find a reward of food 15 minutes after being injected peripherally with endorphin analog. Injection of 80mcg/kg bodyweight resulted in rats running the maze significantly slower and with more errors than rats injected with diluent. Animals receiving a dose ten times larger (800mcg/kg) were indistinguishable from controls in both running speed and errors, thus making a toxic effect unlikely. Possible change in appetite, thirst, olfaction, emotionality, and general motor activity did not seem to explain the results. The inverted-U shaped dose-related response seems to represent a variation from previous observations with CNS active peptides in that the smaller dose impairs rather than enhances performance. 16 references. (Author abstract modified)

001675 Katz, R. J. Mental Health Research Institute, Dept. of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI 48109 **The albino locus produces abnormal responses to opiates in the mouse.** European Journal of Pharmacology. 68(2):229-232, 1980.

Responses to morphine were compared in pedigreed inbred lines of pigmented mice and in albino lines differing at a single locus or by a chromosomal segment. Albino mice were less sensitive than closely related pigmented lines to effects of morphine on behavioral activation and core temperature. Results indicate the need for caution in the use of albino lines in opiate research. 10 references. (Author abstract modified)

001676 Katz, R. J.; Chudler, R. Mental Health Research Institute, Dept. of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI 48109 **Y-maze behavior after an analog of ACTH4-9, evidence for an attentional alteration.** Psychopharmacology. 71(1):95-96, 1980.

Y-maze performance in mice was examined to assess the extent to which the neuropeptide ORG-2766, an analog of ACTH4-9, influences attention in a design in which learning is probably not directly involved. Adult, male, Swiss-Webster mice were injected with either control solution or various doses of ORG-2766. The drug produced significant alterations in performance in an equiangular Y-maze. In comparison with control performance, both 25microg/kg and 50 microgram/kg of drug produced a significant increase in repeated two arm entries. This response pattern is consistent with the hypothesis that the drug produced a focusing of attention. 12 references. (Author abstract modified)

001677 Katz, R. J.; Doyle, R. L. Mental Health Research Institute, Dept. of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI 48109 **Enhanced responses to opiates produced by a single gene substitution in the mouse.** European Journal of Pharmacology. 67(2/3):301-303, 1980.

The effects of morphine were studied in adult male C57B1/6J mice and in pallid C57B1/6J-pa mice, which differ at a single locus. The stereotyped running and hypothermia induced by morphine in C57B1/6J mice were significantly enhanced in the coisogenic pallid mice. Thus, a single gene may enhance normal sensitivity to opiates. 10 references. (Author abstract modified)

001678 Katz, R. J.; Schmaltz, K. Mental Health Research Institute, Dept. of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI 48109 **Dopaminergic involvement in attention a novel animal model.** Progress in Neuro-Psychopharmacology. 4(6):585-590, 1980.

The dopamine (DA) receptor agonist apomorphine and the DA releasing agent amantadine both produced significant dose related alterations in Y-maze behavior in male Swiss-Webster

mice. Vehicle treated control mice showed high levels of successive alternation and entered all three arms of the maze, whereas treated animals appeared to narrow their attention to two arms. It is suggested that DA activation may cause sensory perseveration. 14 references. (Author abstract modified)

001679 Katz, Richard J. Mental Health Research Institute, Dept. of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI 48109 **Effects of an ACTH4-9 related peptide upon intracranial self stimulation and general activity in the rat.** Psychopharmacology. 71(1):67-70, 1980.

The effects of an adrenocorticotropic hormone (ACTH)4-9 related peptide upon intracranial self-stimulation and general activity in the rat were investigated. Adult male Sprague-Dawley rats were stereotactically implanted with electrodes within the anterior medial forebrain bundle. The rats were trained to respond for intracranial self-stimulation (ICS) and treated with control solution or varying doses of an ACTH4-9-related synthetic peptide (ORG-2766). The drug affected ICS as measured in overnight response records, with the highest dose reliably increasing the amount of responding. In a second experiment, rats were similarly treated and general activity was assessed. No remarkable changes in activity were present at any tested dose. The findings corroborate previous reports suggesting ACTH related peptides may be active in a variety of motivated tasks, but less active with respect to general activity. 14 references. (Author abstract modified)

001680 Katz, Richard J. Mental Health Research Institute, Dept. of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI 48109 **Stress induced facilitation of opiate catalepsy in the rat.** Progress in Neuro-Psychopharmacology. 4(3):309-312, 1980.

Stress induced facilitation of opiate catalepsy in the rat was investigated. Adult male Sprague-Dawley rats were injected with a standard low dose of opiate (10 mg/kg of morphine sulfates). Experimental Ss received one of two stressful procedures (tail pinch, floor cooling) while control Ss were not disturbed. Using motor activity as an index of catalepsy, both stressful procedures prolonged the syndrome. It is concluded that stress may affect this opiate mediated process. 7 references. (Author abstract modified)

001681 Kawasaki, Hiromu; Watanabe, Shigenori; Oishi, Ryozo; Ueki, Showa. Dept. of Pharmacology, Miyazaki Medical College, Miyazaki, 889-16, Japan **Effects of delta9-tetrahydrocannabinol on the cardiovascular system, and pressor and behavioral responses to brain stimulation in rats.** Japanese Journal of Pharmacology. 30(4):493-502, 1980.

In urethane anesthetized male Wistar King-A rats, delta9-tetrahydrocannabinol (THC, 1, 2, and 5mg/kg i.v.) produced a transient rise in blood pressure and a marked reduction in heartrate. In freely moving animals, THC (4, 6, and 8mg/kg i.v.) induced a rise in blood pressure, marked bradycardia, and abnormal behavior (catalepsy, backward walking, and pivoting). THC suppressed behavioral responses to electrical stimulation of the posterior hypothalamus and midbrain reticular formation, but did not inhibit pressor responses to such stimulation. 16 references. (Author abstract modified)

001682 Keshavan, Hiremagulur J. Hrishi; Gurbani, Nirmal K.; Dandiya, Prem C. Dept. of Pharmacology, S. M. S. Medical College, Jaipur, India **Effect of citalopram (Lu 10-171) on tranylcypromine and tryptophan-induced wet-dog shakes in rats.** Psychopharmacology. 70(2):209-212, 1980.

The effect of citalopram (Lu 10-171) on tranylcypromine and tryptophan-induced wet-dog shakes in rats was investigated. It was found that citalopram has profound effects on serotonin (5-HT) metabolism by increasing the 5-HT levels in the cerebellum, medulla, and whole brain with a corresponding decrease of the 5-hydroxyindoleacetic acid (5-HIAA) levels in all parts of the brain except the brainstem. On the other hand, the drug does not appear to have any influence on the wet-dog shakes response induced by the combination of a monoamine oxidase inhibitor and L-tryptophan. It is suggested that by increasing the neuronal levels of 5-HT, citalopram decreases the turnover of 5-HT and firing rate of serotonin neurons. It has also been observed that citalopram could be an agonist of a certain type of 5-HT receptor which does not respond to the behavioral screening model proposed by Bedard and Pycock (1977). 14 references. (Author abstract modified)

001683 Kilbey, M. Marlyne; Ellinwood, Everett H., Jr.; Gonzalez, Larry P.; Cooper, Ralph L. Dept. of Psychology, Middle Tennessee State University, 1501 Murfreesboro Rd., Nashville, TN 37232 **Differential dopaminergic function in young and old female rats as measured by three behaviors.** Communications in Psychopharmacology. 4(1):1-9, 1980.

The effects of d-amphetamine (0.0. 4.0 and 8.0mg/kg) and apomorphine (0.0, 0.5 and 1.0mg/kg) on general activity, startle response and stereotyped behavior were tested in 6.5 and 29-month-old female Long-Evans rats. Following d-amphetamine, younger rats were found to show dose-related augmentations in startle response amplitude which were absent in older rats. Both groups tended to show decreased startle amplitude beginning 30 minutes after apomorphine administration. d-Amphetamine and apomorphine-induced stereotyped behavior of the two groups was equivalent. The lower doses of d-amphetamine and apomorphine resulted in increased activity in older, but not younger rats. These results are discussed in terms of differential responsivity of the nigrostriatal dopaminergic system, modulating stereotypy, and another, unspecified, dopaminergic pathway, modulating startle repsonses, as a function of age. 16 references. (Author abstract)

001684 Kleinrok, Z.; Jagiello-Wojtowicz, E.; Oktaba-Polkowska, A. Dept. of Pharmacology, Institute of Clinical Pathology, Medical Academy, 20-090 Lublin, Poland **Central action of intraventricularly-injected midodrine in rats.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):217-233, 1980.

The effect of intraventricular injections of midodrine upon the central nervous system of the rat was studied. The injections of midodrine increased locomotor activity, decreased body temperature, enhanced haloperidol catalepsy, and increased sedation after reserpine pretreatment in male Wistar rats. Midodrine also enhanced amphetamine stimulated locomotor activity and reduced amphetamine and apomorphine stereotypy. Phenoxybenzamine, yohimbine, and clonidine inhibited the midodrine-induced hyperactivity. Midodrine depressed whole brain concentrations of noradrenaline (NA) and dopamine and reduced NA turnover. Results suggest that midodrine stimulates catecholaminergic neurons. 21 references. (Author abstract modified)

001685 Kleinrok, Zdzislaw; Turski, Lechoslaw. Turski: Dept. of Pharmacology, Institute of Clinical Pathology, Medical School, Jaczewskiego 8, PL-20-090 Lublin, Poland **Kainic acid-induced wet dog shakes in rats: the relation to central neurotransmitters.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(1):37-46, 1980.

The role of various neurotransmitters in wet dog shakes (WDS) induced by intracerebroventricular administration of kainic acid (KA) was examined in male Wistar rats. The effects of various drugs and of chemical and electrolytic lesions indicat-

ed that the WDS associated with KA is under the inhibitory control of noradrenergic and GABAergic neurons and is largely independent of increased central serotonergic activity. The WDS induced by KA closely resembled the shaking behavior induced by morphine withdrawal, but differed from WDS induced by stimulation of central serotonergic receptors. 49 references. (Author abstract modified)

001686 Koblin, D. D.; Little, H. J.; Green, A. R.; Daniels, S.; Smith, E. B.; Paton, W. D. M. Dept. of Anesthesiology, School of Medicine, University of California, San Francisco, CA 94143 **Brain monoamines and the high pressure neurological syndrome.** Neuropharmacology. 19(11):1031-1038, 1980.

Application of high pressure elevated brain 5-hydroxyindoleacetic acid concentrations in male CDI mice, but had little or no influence on 5-hydroxytryptamine (5-HT), dopamine (DA), or noradrenaline (NA) concentrations. Reserpine and the dopamine-beta-hydroxylase inhibitor FLA-63 lowered the pressure at which tremors, convulsions, and death occurred. Para-chlorophenylalanine and alpha-methyl-p-tyrosine did not alter the threshold pressures for the behavioral end points of the high pressure neurological syndrome. Since depletion of 5-HT, NA and DA alone did not affect response to pressure, the alteration in tremor and convulsion threshold may be dependent on a balance of all the monoamine neurotransmitter systems. 37 references. (Author abstract modified)

001687 Koe, B. Kenneth; Koch, Susan W.; Dominy, Beryl W. Dept. of Pharmacology, Central Research, Pfizer Inc., Groton, CT 06340 **Dopamine receptor blockade by imidoline and its proposed active conformation.** European Journal of Pharmacology. 68(2):139-146, 1980.

Imidoline was as potent as chlorpromazine in increasing striatal DOPA accumulation and prolactin secretion in Sprague-Dawley rats in vivo. However, imidoline showed only weak inhibitory activity toward dopamine sensitive adenylate cylase and 3H-spiroperidol binding to striatal membranes in vitro. Results are discussed in relation to the structure and possible active conformation of this novel dopamine receptor blocker. 23 references. (Author abstract modified)

001688 Kokkinidis, Larry; Zacharko, Robert M. Dept. of Psychology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0 **Enhanced lateral hypothalamic self-stimulation responding after chronic exposure to amphetamine.** Behavioral and Neural Biology. 29(4):493-497, 1980.

Intracranial self-stimulation behavior supported by the lateral hypothalamus was evaluated in rats after chronic amphetamine treatment. Rats chronically treated with d-amphetamine and tested with a low dosage of the drug exhibited facilitated response rates relative to animals chronically treated with saline and tested with the same dosage of d-amphetamine. Animals chronically exposed to amphetamine and tested with saline showed depressed self-stimulation rates relative to rats chronically treated and tested with saline. Response sensitization and depression in self-stimulation responding after chronic amphetamine administration are discussed in terms of modified dopaminergic activity induced by chronic drug treatment. 10 references. (Author abstract modified)

001689 Koupilova, M.; Fusek, J.; Hrdina, V.; Herink, J. Purkyne Medical Research Institute, 502 60 Hradec Kralove, Czechoslovakia **Piracetam effect on learning and memory in rats.** Activitas Nervosa Superior. 22(3):193-194, 1980.

The effects of piracetam on learning and memory in rats were investigated in three situations (T-maze/food and water reinforcement, shuttlebox/conditioned avoidance reaction, Skinner box/operant alimentary reactions). Learning in the T-maze was significantly facilitated by a daily dose of 100mg/kg piracetam. Piracetam given for 6 days significantly increased the percentage of correct responses in the shuttlebox. Recall of the operant alimentary response after a 1-week interval was significantly better in piracetam-treated rats.

001690 Krsiak, M.; Tomasikova, Z. Institute of Pharmacology, Czechoslovak Academy of Sciences, Albertov 4, 128 00 Prague 2, Czechoslovakia **Effects of scopolamine on agonistic behaviour in mice.** Activitas Nervosa Superior. 22(3):201-203, 1980.

The effects of scopolamine on agonistic behavior in mice were investigated among 49 pairs of male mice (one singly housed and one nonaggressive, group-housed mouse). Isolates were treated with one of two doses of scopolamine or saline 30 min before each of three weekly interactions. Scopolamine produced a marked dose-dependent reduction of aggressive activities in aggressive mice: the reduction was significant for all aggressive behaviors at both high and low dosages. Scopolamine also consistently increased frequency of social and locomotor activities in both aggressive and timid mice. 4 references.

001691 Kuraishi, Yasushi; Satoh, Masamichi; Harada, Yoshio; Akaike, Akinori; Shibata, Takashi; Takagi, Hiroshi. Dept. of Pharmacology, Kyoto University, Kyoto 606, Japan **Analgesic action of intrathecal and intracerebral beta-endorphin in rats: comparison with morphine.** European Journal of Pharmacology. 67(1):143-146, 1980.

The analgesic effects of beta-endorphin and morphine were assessed after injection into the nucleus reticularis gigantocellularis (NRGC), spinal subarachnoid space, and third ventricle of male albino rats. The NRGC was 4 to 5 times more sensitive than the spinal subarachnoid space and third ventricle to beta-endorphin and 13 to 19 times more sensitive than the other regions to morphine. It is suggested that beta-endorphin has more sites of action than morphine for the production of analgesia. 10 references. (Author abstract modified)

001692 Kuribara, Hisashi. Division for Behavior Analysis, Behavior Research Institute, School of Medicine, Gunma University, 3-39-22 Showa-machi, Maebashi 371, Japan **Effects of repeated administration of d-amphetamine on Sidman avoidance responding in rats.** Psychopharmacology. 71(1):105-107, 1980.

The effects of repeated administration of d-amphetamine on Sidman avoidance responding in rats were investigated. The response (lever-press) enhancing effect of d-amphetamine increased progressively after repeated administration. The change in behavior was more marked in the animals exposed to the avoidance situation during the period of the drug effect than in those given the drug after termination of each avoidance session. The present results suggest that the enhancing effect of d-amphetamine as demonstrated on Sidman avoidance responding in rats is dependent on the drug experience of the experimental animals and on the experimental situation to which the animals are exposed during the period of the drug effects. 12 references. (Author abstract modified)

001693 Kuribara, Hisashi; Tadokoro, Sakutaro. Division for Behavior Analysis, Behavior Research Institute, School of Medicine, Gunma University, 3-39-22 Showa-machi, Maebashi 371, Japan **Effects of psychotropic drugs on FI responding and adjunctive drinking in rats.** Pharmacology Biochemistry and Behavior. 13(5):657-662, 1980.

The effects of d-amphetamine (AM), chlorpromazine (CPZ), and diazepam (DZ) on schedule controlled responding (lever-pressing) and adjunctive drinking under a fixed-interval (FI) 1.5 min schedule of food reinforcement in rats were investigated.

The drinking was measured with a drinkometer and a lickometer. Results suggest that the interpellet distribution of responding, drinking and licking, as well as their total values, yield important information when assessing drug effects on FI responding and adjunctive drinking in rats. 18 references. (Author abstract modified)

001694 Langwinski, R.; Niedzielski, J. Dept. of Pharmacodynamics, Medical Academy, Staszica 4, 20-81 Lublin, Poland **Narcotic analgesics and stereotyped behaviour in mice.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(3):225-227, 1980.

The narcotic analgesics morphine, codeine, fentanyl, pentazocine, and etorphine and the dopamine receptor blocker fluphenazine all caused dose-dependent inhibition of the intensity of stereotyped gnawing induced by methylphenidate (60mg/kg i.p) in mice. Naloxone (0.8mg/kg i.p.) and nalorphine (10mg/kg i.p.) antagonized the effect of the analgesics, but not that of fluphenazine. Climbing behavior induced by apomorphine (5mg/kg subcutaneously) was inhibited by fluphenazine, but not by the analgesics. Results suggest that the analgesics have antidopaminergic activity in mice. 10 references. (Author abstract modified)

001695 Larson, Alice A.; Armstrong, Martha J. Dept. of Veterinary Biology, University of Minnesota, 295 Animal Science/ Veterinary Medicine, St. Paul, MN 55108 **Morphine analgesia after intrathecal administration of a narcotic agonist, chloroxymorphamine and antagonist, chlornaltrexamine.** European Journal of Pharmacology. 68(1):25-31, 1980.

The spinal effects of two opiate compounds with nonequilibrium properties, chloroxymorphamine (COA) and chlornaltrexamine (CNA) were studied in male Sprague-Dawley rats. Permanent indwelling cannulas to the spinal subarachnoid space allowed repeated injections of drugs into a circumscribed receptor population. Results provided evidence for specific and irreversible binding of CNA and COA to opioid receptors. The initial binding of COA in the spinal cord produced short-term agonistic effects resulting in analgesia. CNA and COA both produced long-term antagonism of morphine-induced analgesia. These effects were more potent and longer lasting after intrathecal injections than in other test systems. 13 references. (Author abstract modified)

001696 Le Moal, M.; Stinus, L.; Simon, H. Neurobiologie du Comportement, Inst. Biologie Animale, Universite de Bordeaux I, Avenue des Facultes, F-33405 Talence Cedex, France **Self-administration of d-amphetamine and aminergic systems in the rat.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 146-148).

Acquisition of the self-administration of d-amphetamine (7.5 micrograms/kg/lever press) was studied in the rat after lesions of the dopaminergic mesocorticolimbic system (DA MCL) of the nucleus caudatus (NC) of the ascending noradrenergic system (NAS) of the anterior raphe nuclei (dorsal and medial) or DR and MR. Lever presses were significantly increased after lesions of the DA MCL and MR. The NC, NAS, or DR rats showed no change when compared to controls. The results are paradoxical and bring new insights into the action of d-amphetamine on aminergic systems. 4 references. (Author abstract modified)

001697 Lebrecht, Urszula; Nowak, J. Z. Dept. of Biogenic Amines, Institute of Pharmacology, Polish Academy of Sciences, 60, Narutowicza St., 90-136 Lodz, Poland **Effect of single and repeated electroconvulsive shock on serotonergic system in rat brain -- II. Behavioural studies.** Neuropharmacology. 19(11):1055-1061, 1980.

Head twitch behavior induced by intraventricular 5-hydroxytryptamine (5-HT) or i.p. 5-hydroxytryptophan in male Wistar rats treated with tranylcypromine was examined after single or repeated electroconvulsive shock (ECS). The frequency of head twitch behavior evoked by either serotonergic agent was not altered 1, 24, or 48 hours after a single ECS. However, repeated ECS (once daily for 10 days) increased the frequency of head twitch behavior induced by 5-HT or 5-HTP by about 100% 24 and 48 hours after shock. Results suggest that repeated ECS increases the sensitivity of central 5-HT receptors. 52 references. (Author abstract modified)

001698 Lee, Nancy M.; Leybin, Leonid; Chang, Jaw-Kang; Loh, Horace H. Dept. of Pharmacology, University of California, San Francisco, CA 94143 **Opiate and peptide interaction: effect of enkephalins on morphine analgesia.** European Journal of Pharmacology. 68(2):181-185, 1980.

Morphine analgesia was inhibited by met-enkephalin but potentiated by leu-enkephalin in the tail flick test in male ICR mice. Neither enkephalin showed analgesic effects when tested alone. The analgesic enkephalin analog FK33824 also potentiated morphine analgesia. Tolerance developed to morphine analgesia but not to the inhibitory effect of met-enkephalin. 18 references. (Author abstract modified)

001699 Leith, Nancy J.; Barrett, Robert J. Tennessee Neuropsychiatric Institute, 1501 Murfreesboro Road, Nashville, TN 37217 **Effects of chronic amphetamine or reserpine on self-stimulation responding: animal model of depression?** Psychopharmacology. 72(1):9-15, 1980.

The effects of chronic amphetamine or reserpine on self-stimulation responding are described, and the postulated relationship between the mood-altering properties of amphetamine (euphoria and depression) and its effects on the sensitivity of the reward system of the brain is discussed. The effects of chronic reserpine on self-stimulation responding were investigated. Separate groups of animals implanted with stimulating electrodes in the medial forebrain bundle were administered daily injections of saline, d-amphetamine, or reserpine. At treatment termination, both drug groups showed a significant elevation of the reinforcement threshold, with no recovery occurring during 18 subsequent days. Thus, drug-induced depression of self-stimulation responding may serve as an animal model for studying the underlying physiological basis for clinical depression, or at the very least, for drug-induced depression. 20 references. (Author abstract modified)

001700 Lewis, Vahn A.; Liles, I. Cathy University of Texas, Dental Branch, Houston, TX 77025 **The effect of morphine, pimozide and naloxone on discrimination by rats in a shock escape test.** Life Sciences. 27(25&26):2649-2654, 1980.

The effect of neuroactive drugs on rats performing escape from noxious foot shock was evaluated by signal decision analysis. Morphine increased discrimination at low doses by generally decreased responding and discrimination with increasing doses. Pimozide increased discrimination by decreasing false alarming. Naloxone had no effect on any parameter studied. The increased discrimination produced by low doses of morphine and pimozide is seen as an index of their calming effects. 15 references. (Author abstract)

001701 Lotti, V. J.; Yarbrough, G. G.; Clineschmidt, B. V. Merk Institute for Therapeutic Research, West Point, PA 19486 **Investigations on the interaction of thyrotropin-releasing hormone (TRH) and MK-771 with central noradrenergic mechanisms.** Psychopharmacology. 70(2):145-148, 1980.

The actions of thyrotropin releasing hormone (TRH) and a novel TRH analog, MK-771, in animal test procedures considered predictive of an interaction with central noradrenergic mechanisms were investigated. Both compounds restored flexor reflex activity in rats with acute spinal transections. The effect of MK-771 in this test was not modified by pretreatment with reserpine plus alpha-methyl-p-tyrosine but was antagonized by the alpha-adrenergic blocking agent, phenoxybenzamine. However, another alpha-adrenergic blocking agent, HEAT, was ineffective in this regard. Additionally, TRH and MK-771 restored the anticonvulsant actions of methazolamide in mice pretreated with reserpine or picolinic acid. These data, along with the findings that MK-771 and TRH enhance depletion of brain norepinephrine induced by alpha-methyl-p-tyrosine, indicate that these agents may affect central noradrenergic mechanisms. 20 references. (Author abstract modified)

001702 Lowery, Susan P.; Barkley, Philip; Baez, Luis A. Baez: Dept. of Psychology and School of Medicine, Southern Illinois University, Carbondale, IL 62901 **The influence of anterior neostriatal lesions on the behavioural effects of spiroperidol in rats.** Progress in Neuro-Psychopharmacology. 4(3):269-276, 1980.

The influence of anterior neostriatal lesions on the behavioral effects of spiroperidol in rats was investigated. Rats with anterior neostriatum lesions exhibited significantly less catalepsy in response to spiroperiodol administration than did sham operated rats. Anterior neostriatal lesions, however, did not affect the spiroperidol-induced reduction of open-field activity. These findings suggest that spiroperidol influences cataleptic behavior and open-field activity through actions on separate central sites or systems. 24 references. (Author abstract modified)

001703 Lowy, Martin T.; Yim, George K. W. Yim: Dept. of Pharmacology and Toxicology, School of Pharmacy and Pharmacal Sciences, Purdue University, West Lafayette, IN 47907 **Selective reduction by dexamethasone of stress-related hyperphagias.** Life Sciences. 27(25&26):2553-2558, 1980.

Various types of stress related feedings were studied in rats treated with dexamethasone (DEX), a potent glucocorticoid which inhibits synthesis and stress-induced release of pituitary beta-endorphin. Six hour daytime feeding induced by 2-deoxy-D-glucose (2-DG) or 24 hr food deprivation were significantly decreased by DEX pretreatment. A similar reduction of tail-pinch induced eating was also observed. In contrast, 6 hr hyperphagia induced by insulin was not decreased by DEX. Nighttime 12 hr rat chow intake was attenuated by DEX treatment, while no change was observed in daytime 12 hr food intake. The feeding profile obtained following DEX is thus identical to that previously observed in naloxone-treated rats. These results therefore suggest the involvement of endogenous opiates in these stress-induced hyperphagias (2-DG, FD, tail pinch, night). 31 references. (Author abstract modified)

001704 Lucas, Linda A.; Scott, J. P. Bowling Green State University, Bowling Green, OH 43402 **Genetic and experimental factors affecting the paradoxical effect of amphetamine in dogs.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p.673-676).

The effects of d-amphetamine sulfate on inhibitory training were studied in 16 beagles, 100 Telomians, and 31 F1 hybrids at three ages and under two experimental conditions to assess genetic and experimental factors. In the home room with separation distress at a minimum, the performance of most beagles and F1 hybrids was improved by amphetamine at 16 weeks, and less so at 8 weeks of age. Telomians were not benefitted at either age. As adults, with separation distress at a maximum in a strange kennel, eight out of 11 F1 hybrids showed dramatic improvement under amphetamine and the remaining three were definitely worse. Thus, the paradoxical effect is enhanced by separation distress and is seen in its most pronounced form in the F1 hybrids. 2 references. (Author abstract modified)

001705 Lyubimov, B. I.; Tolmacheva, N. S.; Ostrovskaya, R. U.; Mitrofanov, V. S. Inst. farmakologii AMN SSSR, Moscow, USSR **/An experimental study of the neurotropic action of lithium oxybutyrate./** Eksperimental'noye izucheniye neyrotropnoy aktivnosti litiya oksibutirata. Farmakologiya i Toksikologiya. 43(3):273-276, 1980.

The neurotropic action of lithium oxybutyrate was studied experimentally in white mice, rats, and rabbits. The known antimanic drug lithium carbonate was compared experimentally with the compound lithium oxybutyrate which has a neurotropic action similar to that of lithium carbonate. Lithium oxybutyrate increased the duration of thiopental sodium sleep, increased the effect of thiopental sodium, and decreased spontaneous motor activity in the mice. Lithium oxybutyrate had a greater effect on the elementary conditional reflex than on the conditional defense reflex in the rats. Results show that lithium oxybutyrate elicits a more prolonged and more pronounced central depressant action, and significantly less toxicity than lithium carbonate. Lithium oxybutyrate is very soluble, and this makes it possible to use it for injections which are required for the rapid arrest of manic conditions. 5 references. (Journal abstract modified)

001706 Maayani, Saul; Weinstein, Harel; Glick, Stanley D.; Meibach, Richard C. Dept. of Pharmacology, Mount Sinai School of Medicine, New York, NY **Phencyclidine (PCP) and derivatives: pharmacology and structure-activity relationships.** Psychopharmacology Bulletin. 16(4):57-59, 1980.

The distribution and effects of phencyclidine (PCP) derivatives were studied on rat behavior, on the cholinergic contraction of ileum and muscle, on binding of muscarinic ligands to brain membrane fractions and on activity of cholinesterases. PCP and its derivatives ketamine and cyclohexamine impaired spatial alternation performance in rats, an effect which appears to be mediated by an anticholinergic action. In peripheral tissue, the net pharmacological effects of the PCPs were found to be antiacetylcholine activity. In an attempt to understand the nature of specific binding of (3H)-PCP to rat brain membranes, it was shown that (3H)-PCP binds to glass fiber filters in a manner indistinguishable from specific binding. Effect of PCP on glucose utilization by rat brain, and the physicochemical properties of PCP derivatives and molecular determinants for their action are also discussed. 12 references.

001707 Maier, Steven F.; Davies, Susan; Grau, James W.; Jackson, Raymond L.; Morrison, Daniel H.; Moye, Thomas; Madden, John, IV; Barchas, Jack D. Dept. of Psychology, University of Colorado, Boulder, CO 80309 **Opiate antagonists and long-term analgesic reaction induced by inescapable shock in rats.** Journal of Comparative and Physiological Psychology. 94(6):1172-1183, 1980.

Five experiments examined the influence of opiate antagonists on the short-term analgesic reaction resulting 30 min after exposure to inescapable shock and the long-term analgesic reactions after reexposure to shock 24 hr after inescapable shock exposure. Experiment 1 showed that the long-term reaction could be reduced by administration of naltrexone prior to exposure to inescapable tail shock, while Experiment 2 showed that this reduction was dose dependent. Experiment 3 showed that the reaction could also be reduced by administration of naltrexone prior to reexposure to shock, and Experiment 4 demonstrated that it could be reduced by administration of a large dose of na-

loxone prior to reexposure. Experiment 5 indicated that short-term analgesic reaction can be reduced by naltrexone administered prior to inescapable shock. Implications of these results for the biochemical substrates of both learned helplessness and stress-induced analgesia are discussed. 56 references. (Author abstract modified)

001708 Makanjuola, Roger O. A.; Dow, Ronald C.; Ashcroft, George W. Faculty of Health Sciences, University of Ife, Ile Ife, Nigeria **Behavioural responses to stereotactically controlled injections of monoamine neurotransmitters into the accumbens and caudate-putamen nuclei.** Psychopharmacology. 71(3):227-235, 1980.

In male Wistar rats pretreated with the monoamine oxidase inhibitor nialamide, bilateral injections of dopamine into the nucleus accumbens stimulated exploratory activity, locomotor activity, sniffing, and rearing. Bilateral injections of dopamine into the caudate/putamen induced intense stereotyped activity. Both responses were blocked by i.p. haloperidol. Noradrenaline had no particular effect after bilateral injection into the nucleus accumbens, but led to a moderate stimulation of stereotyped activity after bilateral injection into the caudate/putamen. Bilateral injection of 5-hydroxytryptamine (5-HT) into the accumbens nuclei induced a moderate stimulation of locomotor activity accompanied by indecisive hole dipping activity and sniffing; in contrast, the locomotor stimulation induced by injection of 5-HT into the caudate/putamen was accompanied by stereotyped hole dipping. 23 references. (Author abstract modified)

001709 Malec, D.; Langwinski, R. Dept. of Pharmacodynamics, Institute of Clinical Pathology, Medical School, 4, Staszica Str., 20-081 Lublin, Poland **Effect of quipazine and fluoxetine on analgesic-induced catalepsy and antinociception in the rat.** Journal of Pharmacy and Pharmacology. 32(1):71-73, 1980.

The involvement of serotonin (5HT) in the cataleptogenic effects of analgesics and in the antinociceptive activity of morphine was demonstrated in male Wistar rats. Quipazine and fluoxetine enhanced catalepsy induced by morphine, fentanyl, and codeine. The 5-HT receptor stimulants also enhanced the antinociceptive effect of morphine, but not of codeine or pentazocine. Fentanyl analgesia was attenuated by quipazine and enhanced by fluoxetine. 28 references.

001710 Martin, Arnold R.; Paradkar, Vidyadhar M.; Peng, Geoffrey W.; Speth, Robert C.; Yamamura, Henry I.; Horn, Alan S. Dept. of Pharmaceutical Sciences, College of Pharmacy, University of Arizona, Tucson, AZ 85721 **Conformationally restricted tricyclic antidepressants. 1. Octahydrodibenzazepinonaphthyridines as rigid imipramine analogues.** Journal of Medicinal Chemistry. 23(8):865-873, 1980.

In an investigation of conformationally restricted tricyclic antidepressants, the stereoselective synthesis and structure elucidation of the racemic 2-methyl-1,2,3,4,4a,8,9,15a-octahydro-15H-dibenz(b,f)azepino (5,4a,4-bc)-2,7-naphthyridine ring fusion isomers are described. The racemic ring fusion isomers were compared with imipramine in rodents as inhibitors of (-)norepinephrine uptake in vitro and in vivo, as inhibitors of serotonin uptake in vitro, and as inhibitors of the binding of the muscarinic cholinergic antagonist (3H)quinuclidinylbenzilate (QNB), the alpha-adrenergic antagonist WB-4101, and the dopaminergic antagonist (3H)spiperone at their respective membrane binding sites in homogenates obtained from rat brain. 70 references. (Author abstract modified)

001711 Martinez, Joe L., Jr.; Vasquez, Beatriz J.; Jensen, Robert A.; McGaugh, James L. Dept. of Psychobiology, School of Biological Sciences, University of California, Irvine, CA 92717 **L-dopa enhances acquisition of an inhibitory avoidance response.** Communications in Psychopharmacology. 4(3):215-218, 1980.

Acquisition of an inhibitory avoidance response in Fischer-344 rats was significantly enhanced by administration of 250mg/kg l-dopa 1.0 or 0.5 hours prior to training. L-dopa did not affect retention when given immediately after training. It is suggested that l-dopa may influence sensory, motivational, or attentional variables. 9 references. (Author abstract modified)

001712 Masur, Jandira; Boerngen, Roseli. Escola Paulista de Medicina, Depto. de Psicobiologia, Rua Botucatu, 862-C.P. 20399, 04023 Sao Paulo, Brazil **The excitatory component of ethanol in mice: a chronic study.** Pharmacology Biochemistry and Behavior. 13(6):777-780, 1980.

The effects of chronic administration of initially depressant, ineffective, and excitatory doses of ethanol on the locomotor activity of mice was studied. Results show that: 1) an excitatory effect of ethanol is observed after tolerance develops to its depressant action; 2) the effect induced by an initially excitatory dose of ethanol became more pronounced with chronic exposure to the drug; and 3) tolerance to the excitatory effect was not reached after 60 days of ethanol treatment. 6 references. (Author abstract)

001713 McCaul, Mary Elizabeth. Boston University Graduate School **The effects of d-amphetamine, chlordiazepoxide, and pentobarbital on behavior maintained by escape from punishment in pigeons. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):1955-B, 1980. Ann Arbor, Univ. Microfilms No. 8024204, 147p., 1980.

To clarify the relationship between punished and escape behaviors and to characterize the effects of drugs on these behaviors, behavior maintained by escape from punishment was examined in pigeons. In addition, to assess the relative importance of the schedule itself as opposed to the maintenance of behavior by positive reinforcement versus escape from punishment, drug effects were determined on comparable patterns of behavior maintained under schedules of positive reinforcement without punishment. Despite similar rates and patterns of responding maintained in the different situations, the effects of d-amphetamine, pentobarbital, and chlordiazepoxide differed as the consequences of responding differed. It is determined that while schedule control is an important determinant of the behavioral effects of these drugs, these effects also depend on the consequences maintaining behavior. (Journal abstract modified)

001714 McGuire, Patricia S.; Seiden, Lewis S. Seiden: University of Chicago, Dept. of Pharmacological and Physiological Sciences, 947 East 58th St., Chicago, IL 60637 **Differential effects of imipramine in rats as a function of DRL schedule value.** Pharmacology Biochemistry and Behavior. 13(5):691-694, 1980.

The differential effects of imipramine in rats as a function of differential reinforcement of low response rate (DRL) schedule value were investigated. On a DRL 9 sec schedule of water reinforcement, imipramine at doses of 2.5mg/kg to 20.0mg/kg resulted in no significant changes in the number of reinforcements or responses. A dose of 5.0mg/kg imipramine, given to rats performing on a DRL 72 sec schedule, produced a significant increase in the number of reinforcements and a concomittant decrease in responses. This effect was associated with a shift in the interresponse time (IRT) distribution to longer IRTs. Higher doses decreased both response rate and reinforcement rate on the DRL 72 sec schedule. These findings demonstrate the importance of schedule parameters in determining the behavioral effects of imipramine. 14 references. (Author abstract modified)

001715 McKearney, James W. Worcester Foundation for Experimental Biology, Shrewsbury, MA 01545 **Interrelations among prior experience and current conditions in the determination of behavior and the effects of drugs.** In: Thompson, T., Advances in behavioral pharmacology. V. 2. New York, Academic Press, 1979. 263 p. (p. 39-64).

Selected experimental findings that clearly point to the need for broader approaches to the experimental analysis of behavior and the analysis of the behavioral effects of drugs are examined: specifically, the interrelations among current schedule conditions, prior experience, and contextual factors that are important in determining changes in behavior. Characteristics of currently ongoing behavior, and the effects of drugs on behavior are clearly determined to a great extent by the type and scheduling of that behavior's immediate antecedents and consequences. Ways in which differences in prior experience can alter the effects of drugs are examined, and the contributions that the study of the behavioral effects of drugs can make to a general understanding of the manner in which prior experience can determine present behavior are discussed. 61 references.

001716 McKenzie, G. M.; Hansen, E. L. Dept. of Pharmacology, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H7 **GABA agonists dissociate striatal unit activity from drug-induced stereotyped behaviour.** Neuropharmacology. 19(10):957-962, 1980.

The effects of the GABA agonist muscimol on dexamphetamine and apomorphine induced behavioral activation and stereotypy accompanied by increased neuronal activity in the striatum were investigated in rats. Muscimol produced dose-related inhibition in the striatum. Muscimol pretreatment blocked the striatal activation produced by dexamphetamine and apomorphine, but significantly enhanced drug induced stereotypy. It is concluded that: 1) enhanced activity by GABAergic synapses may either increase impulse traffic in inhibitory afferents to the striatum, decrease impulse traffic in excitatory afferents to the striatum, or both; and 2) since muscimol potentiated stereotypy at the same time abolishing striatal activation normally accompanying drug-induced stereotypy, it is clear that activation of striatal neurons is not an essential component of stereotypy. Furthermore, it is unlikely that the striatum is the primary site of drug action for the induction of stereotypy. 33 references. (Author abstract modified)

001717 McLean, Jack H.; Glasser, Rachael S.; Kostrzewa, Richard M.; May, James G. Dept. of Psychology, University of New Orleans, New Orleans, LA 70122 **Effects of neonatal 6-hydroxydopa on behavior in female rats.** Pharmacology Biochemistry and Behavior. 13(6):863-868, 1980.

The effects of neonatal 6-hydroxydopa on behavior in female rats were investigated. Litters of female rats were treated at birth and 48 hr later with either saline or 6-hydroxydopa, were ovariectomized in adulthood, and tested on a number of behavioral tasks, including age of vaginal opening, sexual receptivity, open-field activity, equilibrium, and habituation to acoustic startle. Results indicate that the treated animals were more active overall, were more likely to enter inner segments, reared more often, and defecated less than the control animals. On a rod-balancing task, the treated animals exhibited impaired equilibrium. Treated animals were more reactive than controls in response to acoustic startle, but there were no differences between the groups in rate of habituation or sensitization to the startle stimulus. Norepinephrine content of treated animals was significantly lower than controls in the cortex, amygdala, hippocampus, and spinal cord, but higher in the cerebellum and brainstem. There was no difference between the groups in cardiac norepinephrine or in striatal dopamine. 17 references. (Author abstract modified)

001718 Meller, Rachel E.; Keverne, E. B.; Herbert, J. Dept. of Anatomy, University of Cambridge, Downing Street, Cambridge CB2 3DY, England **Behavioural and endocrine effects of naltrexone in male talapoin monkeys.** Pharmacology Biochemistry and Behavior. 13(5):663-672, 1980.

The effect of treating captive male talapoin monkeys with naltrexone hydrochloride was studied both in socially living and singly caged animals. The behavior of the group males and endocrine changes in all treated animals were monitored during the course of treatment and on drug withdrawal. Naltrexone significantly reduced sexual behavior in previously active males, while increasing grooming interactions. Aggressive behavior did not change. There was an overall significant elevation in testosterone, LH, and cortisol during drug treatment and a significant decrease on withdrawal. Changes in prolactin in response to naltrexone depended upon the pretreatment level of this hormone: in males in which levels were low, there was a significant elevation in prolactin, while in those with pretreatment prolactin, levels were unchanged by the drug. The behavioral changes reported for this primate are in direct contrast to changes reported in rodents, while the hormonal changes, except for prolactin, are comparable to others reported. 34 references. (Author abstract modified)

001719 Meltzer, H. Y.; Sturgeon, R. D.; Simonovic, M.; Fessler, R. G. Illinois State Psychiatric Institute, Chicago, IL **Phencyclidine as an indirect dopamine agonist.** Psychopharmacology Bulletin. 16(4):62-65, 1980.

The hypothesis that phencyclidine (PCP) effects may be mediated primarily by DA mechanisms was tested with behavioral and biochemical experiments. These include studies of circling behavior, locomotor activity, stereotyped behaviors, and ataxia in rats, drug interaction studies, comparison of PCP with methylphenidate and d-amphetamine, and other biochemical tests. The neurochemical effects of PCP appear to be similar to those of indirect DA agonists such as methylphenidate or amfonelic acid, increasing impulse-induced release of DA from a reserpine sensitive pool. This conclusion is also consistent with behavioral results that PCP-induced locomotor activity and stereotyped behaviors are antagonized by reserpine and haloperidol. The data for thioridazine, atropine, physostigmine, baclofen, and diazepam, however, suggest that PCP-induced behaviors may be modified by affecting various neurotransmitters of neuromodulators. 9 references.

001720 Metysova, J.; Metys, J.; Valchar, M.; Dlabac, A. Research Institute for Pharmacy and Biochemistry, Kourimska 17, 130 60 Prague 3, Czechoslovakia **Kinetics of central actions of isofloxythepin, an oral neuroleptic drug with prolonged action in rodents.** Activitas Nervosa Superior. 22(3):164-165, 1980.

The central kinetics of isofloxythepin, an oral neuroleptic drug with prolonged action, were investigated in rodents. Behavioral measures employed include: inhibition of spontaneous locomotor activity; lack of motor coordination; antiapomorphine action; inhibition of 5-hydroxytryptophan-induced behavioral syndrome. Results demonstrate the long-lasting central actions of isofloxythepin. Behavioral results are in agreement with results of biochemical investigations and suggest pronounced functional changes in striatal dopamine receptor sensitivity after oral administration of isofloxythepin. 4 references.

001721 Miceli, Dom; Marfaing-Jallat, Pierrette; Le Magnen, Jacques. Lab. de Neurophysiologie Sensorielle et Comportementale, College de France, 11, place Marcelin Berthelot, F-75231 Paris, Cedex 05, France **Ethanol aversion induced by parenterally**

administered ethanol acting both as CS and UCS. Physiological Psychology. 8(4):433-436, 1980.

The effects in rats of different doses of ethanol (1.0 to 4.0g/kg) injected ip during three consecutive days on subsequent voluntary consumption of the drug were tested. Ethanol treatment induced a significant suppression of ethanol drinking. Five injections of naloxone (10mg/kg) combined with ethanol (1.75g/kg) performed on alternate days significantly enhanced aversion in a second experiment. The findings indicate that ethanol administered via the ip route generates both negative reinforcement (UCS) and the associated oral ethanol flavor (CS) for aversion conditioning. The implications for investigations related to obtaining an animal model of behavioral dependence toward ethanol are discussed. 18 references. (Author abstract modified)

001722 Miczek, Klaus A. Dept. of Psychology, Carnegie-Mellon University, Pittsburgh, PA 15213 **Chronic delta9-tetrahydrocannabinol in rats: effect on social interactions, mouse killing, motor activity, consummatory behavior, and body temperature.** Psychopharmacology. 60(2):137-146, 1979.

Behavioral and physiologic effects of daily administration of delta9-tetrahydrocannabinol (THC) were assessed over a 60-day period, investigating different dose levels, routes of administration, drug vehicles, and rat strains (Sprague-Dawley, Wistar, Long-Evans, Fischer). All THC-treated rats showed compulsive motor routines after 3 to 4 weeks. Whether maintained on a restricted feeding regimen or not, there was no evidence for increased aggressive behavior between cage mates in any treatment groups. Mousekilling was induced in 70% to 75% of all Sprague-Dawley and Fischer rats, but not in the THC-treated groups. In general, results indicate that tolerance develops rapidly to THC's effects on body temperature and consummatory behavior, but not to changes of certain motor activities. 41 references. (Author abstract modified)

001723 Moerschbaecher, Joseph M.; Thompson, Donald M. Dept. of Pharmacology, Georgetown University Schools of Medicine and Dentistry, Washington, DC 20007 **Effects of phencyclidine, pentobarbital, and d-amphetamine on the acquisition and performance of conditional discriminations in monkeys.** Pharmacology Biochemistry and Behavior. 13(6):887-894, 1980.

The effects of phencyclidine, pentobarbital, and d-amphetamine on the acquisition and performance of conditional discriminations in monkeys were investigated. Completion of a two member chain of discriminations produced a food pellet and errors produced a brief timeout. One component of the multiple schedule was a repeated acquisition task where the discriminative stimuli for left and right lever responses changed each session (learning). In the other component, the discriminative stimuli for left or right lever reponses were the same each session (performance). The three drugs each produced dose-related decreases in the overall rate of responding in both components of the multiple schedule. At high doses each drug increased the percent errors in each component. At lower doses, however, the three drugs produced selective effects on accuracy. Errors were increased in the learning component at lower doses than those required to disrupt the discrimination in the performance component. A signal detection analysis of the data revealed that none of the drugs increased errors by selectively affecting either discriminability or bias. 27 references. (Author abstract modified)

001724 Mohrland, J. S.; Gebhart, G. F. CNS Research, Upjohn Co., Kalamazoo, MI 49001 **Effect of selective destruction of serotonergic neurons in nucleus raphe magnus on morphine-induced antinociception.** Life Sciences. 27(25&26):2627-2632, 1980.

Microinjection of the serotonergic neurotoxin 5,7-dihydroxytryptamine (5,7-DHT) into the nucleus raphe magnus (NRM) of the rat brainstem significantly attenuated morphine-induced antinociception as measured by the hotplate but not tail flick test. The selective destruction of the serotonin containing neurons in NRM also significantly reduced the spinal cord content of serotonin without altering the content of norepinephrine. Nociceptive thresholds in both analgesiometric tests were unaltered following 5,7-DHT injection into NRM. Results indicate that a spinopetal serotonergic system localized in NRM is involved in opiate analgesia but appears not to exert a tonic inhibitory effect on nociceptive transmission. 41 references. (Author abstract)

001725 Morley, John E.; Levine, Allen S. Levine: Research Chemist Veterans Administration Medical Center, 54th St. & 48th Ave. South, Minneapolis, MN 55417 **Substance P suppresses stress-induced eating.** European Journal of Pharmacology. 67(2/3):309-311, 1980.

Parenterally administered substance-P suppressed eating induced by stress (mild tail pinch), but did not alter eating induced by starvation in male Sprague-Dawley rats. The effect of substance-P on stress-induced eating may be associated with alterations in the normal modulation of pain transmission. 10 references. (Author abstract moidified)

001726 Morris, Michael D.; Virus, Robert M.; Gebhart, G. F. Dept. of Pharmacology, University of Iowa, Iowa City, IA 52242 **Dorsal tegmental bundle destruction: effects on operant behavior, brain catecholamine levels, and behavioral suppression produced by adrenergic agonists.** Life Sciences. 27(25&26):2621-2626, 1980.

The effect of lesions of the ascending noradrenergic dorsal tegmental bundle (DTB) upon the content of catecholamines in forebrain areas, operant behavior and the suppression of operant behavior produced by methoxamine, clonidine, and isoproterenol was investigated. It was found the lesions of the DTB which significantly reduced the content of noradrenaline in the hippocampus also produced a significant increase in the total forebrain content of dopamine, facilitated relearning of a continuous reinforcement operant task, increased the suppression of operant behavior produced by isoproterenol and decreased the suppressive effects of methoxamine. 14 references. (Author abstract)

001727 Mueller, Kathyrne; Hsiao, Sigmund. Pediatrics Dept., Medical School, University of California, San Diego, La Jolla, CA 92093 **Pemoline-induced self-biting in rats and self-mutilation in the deLange syndrome.** Pharmacology Biochemistry and Behavior. 13(5):627-631, 1980.

Pemoline-induced self-biting in rats was investigated in relation to self-mutilation in the deLange syndrome. It is suggested that if pemoline-induced self-biting is behaviorally similar to self-mutilation in the deLange syndrome, similar neurochemical mechanisms may be involved in both. Oral administration of 140 and 220mg/kg pemoline reliably induced persistent self-biting in rats. This behavior was indistinguishable from stereotyped grooming and its most common target was the medial digits of the foreleg. Pemoline-induced self-biting was accompanied by hyperactivity, stereotyped behavior, abnormal social behavior, abnormal sensorimotor behavior, and unresponsiveness or avoidance of moderate levels of sensory stimuli. Several of these behaviors have also been reported in deLange patients. 16 references. (Author abstract modified)

001728 Murakami, Hiroko; Segawa, Tomio. Dept. of Pharmacy, Kyoto University Hospital, Sakyo-ku, Kyoto 606, Japan **Effect of apomorphine on morphine-induced decrease in locomotor**

activity and increase in dopamine turnover in rats. Japanese Journal of Pharmacology. 30(4):565-567, 1980.

Apomorphine (2mg/kg) antagonized the suppression of locomotor activity induced by morphine (10mg/kg) in male Wistar rats. Apomorphine also blocked the morphine-induced increase in striatal levels of homovanillic acid and dihydroxyphenylacetic acid. It is suggested that the morphine-induced increase in striatal dopamine turnover is a compensatory mechanism for lack of stimulation of dopamine receptors. 9 references.

001729 Myslobodsky, Michael S.; Braun, Hava. Psychobiology Research Unit, Dept. of Psychology, Meir Hospital, Tel-Aviv University, Ramat Aviv, Israel **Postural asymmetry and directionality of rotation in rats.** Pharmacology Biochemistry and Behavior. 13(5):743-745, 1980.

The hypothesis that the direction of postural asymmetry can predict rotational side preferences caused by amphetamine, was tested. Postural asymmetry of male and female Wistar rats was assessed using four tests: 1) tail suspension; 2) tail holding; 3) tail pinch; and 4) walking on a narrow path. The tests were conducted prior to and after ()amphetamine administration. Rotational directionality was assessed in a rotometer. None of the tests predicted the direction of circling. Results suggest that there is a multitude of systems contributing to asymmetric posture. 15 references. (Author abstract modified)

001730 Nagayama, H.; Hingtgen, J. N.; Aprison, M. H. Hingtgen: Institute of Psychiatric Research, Indiana University School of Medicine, Indianapolis, IN 46223 **Pre- and postsynaptic serotonergic manipulations in an animal model of depression.** Pharmacology Biochemistry and Behavior. 13(4):575-579, 1980.

The depressant effects of D,L-5-hydroxytryptophan (5-HTP) on male Wistar rats responding on a food reinforced operant schedule were nearly abolished by methysergide, a postsynaptic 5-hydroxytryptamine (5-HT) blocker, but were potentiated by fluoxetine, a 5-HT uptake blocker. Amitriptyline reduced the behavioral depression induced by 5-HTP by about 50%. Results suggest that the therapeutic effects of some antidepressant drugs may be due to postsynaptic effects at central 5-HT receptors. 32 references. (Author abstract modified)

001731 Navratil, J.; Medek, A.; Hrbek, Jan; Komenda, S.; Macakova, J. ul. Dr. S. Allende 3, 775 15 Olomouc, Czechoslovakia **Effect of choline on conditioned food motor reflexes in cats.** Activitas Nervosa Superior. 22(3):205-206, 1980.

The effects of choline, amitriptyline, the combination of choline and amitriptyline, and the combination of choline, amitriptyline and physostigmine on conditioned food motor reflexes were investigated in a group of eight cats of both sexes. The conditioned reflexes were established 2 to 3 months before the drug experiments according to the procedure of Medek et al. (1970). Few significant drug effects were found. It is concluded that the method of conditioned food motor reflexes is not sensitive enough to demonstrate the effect of choline performance. 5 references.

001732 Nielsen, Jann Adams. University of Minnesota **Interaction of prostaglandins and the effects of morphine and amphetamine in rats. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1334-B, 1980. Ann Arbor, Univ. Microfilms No. 8019554, 201p., 1979.

A series of Experiments were conducted in the rat to determine if prostaglandins (PGs) are involved in the actions of d-amphetamine (d-Amp) and morphine (M). Amp decreased the amount of 3H-dopamine (3H-DA) metabolites in rat lateral brain ventricle; intracerebroventricular administration of PGF2alpha affected the recovery of these metabolities in a dose-related manner. PGF2alpha and PGE1 altered indices of central dopaminergic and noradrenergic neuronal activity, possibly through effects on neurotransmitter release processes. PGF2alpha's effects seemed to be unrelated to d-Amp's effects, while PGF1 antagonized d-Amp's effects. Pretreatment with indomethacin to inhibit PG synthesis enhanced the capacity of low dose d-Amp to suppress fixed-ratio 30 behavior and rectal temperature, indicating that one or more of the PGs modulate the central actions of d-Amp. Results of similar studies with M suggest that indomethacin inhibited the synthesis of PGs and that PGs are important in tolerance to and dependence on M. Finally, low doses of PGF2alpha had no effect on M's acute action and antagonized naloxone-induced behavioral suppression, while a dose higher potentiated the behavioral suppressant action of both M and naloxone. PGE2, in a dose which had no effect on acute behavioral suppression of M, potentiated naloxone-induced behavioral suppression in M-treated rats. It is concluded that PGs affect the initial response to M and that the adaptive changes (tolerance/dependence) associated with this drug are even more sensitive to PGs. (Journal abstract modified)

001733 Nistico, G.; Carruba, M. O.; Rotiroti, D.; Naccari, F. Dept. of Pharmacology, School of Medicine, University of Messina, Piazza XX Settembre 4, I-98100 Messina, Italy **Enhanced behavioural, electrocortical and hyperthermic effects of serotonin-like agents after impairment of serotonin transmission in fowl brain.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(3):229-234, 1980.

Chronic impairment of serotonergic function led to enhanced behavioral and hyperthermic responses to 5-hydroxytryptamine (5-HT) and 5-HT agonists in adult fowls and young chicks. Injection of 5-HT into the third cerebral ventricle on postnatal day 35 produced more intense and longer lasting hyperthermic, behavioral, and electrocortical responses in chicks that had been treated prenatally with 5,6-dihydroxytryptamine (5,6-DHT) than in controls. Intraventricular injection of fenfluramine to adult fowls pretreated with 5,6-DHT did not produce significant body temperature and behavioral changes. Fenfluramine and quipazine produced more marked hyperthermic and behavioral responses in fowls that had been treated with methysergide for 14 or 21 days than in controls. 41 references. (Author abstract modified)

001734 Nistico, G.; Rotiroti, D.; Stephenson, J. D. Institute of Pharmacology, Faculty of Medicine, University of Messina, Messina, Italy **Stereotyped behaviour and electrocortical changes after intracerebral microinfusion of dopamine and apomorphine in fowls.** Neuropharmacology. 19(10):963-969, 1980.

The effects of dopamine and apomorphine, infused into the third cerebral ventricle, lateral ventricle or into several discrete areas of the CNS, on stereotyped behavior, electrocortical activity and body temperature of adult fowls, were studied. Dopamine infused into the lateral ventricle or hypothalamus of fowls, pretreated with a monoamine oxidase inhibitor evoked behavioral and electrocortical sleep with contralateral head/neck deviation and side-to-side stereotyped head/neck movements, repetitive preening and pecking associated with a fall in body temperature. Behavioral and electrocortical sleep associated with stereotyped movements similar to those elicited by dopamine, was obtained after infusing smaller doses of apomorphine into the ventricles, hypothalamus, or n. mesencephalicus profundus, whereas larger doses produced behavioral and electrocortical arousal, vocalization, and increase in locomotor activity. 36 references. (Author abstract modified)

001735 Noble, Ralph G. Rensselaer Polytechnic Institute, Troy, NY 12181 **Opiate antagonists and female functioning.** (Un-

published paper). Final Report, NIMH Grant R03-MH-31987, 1980. 7 p.

The effects of morphine and naloxone on the sexual behaviors of female golden hamsters and the effects of opioid antagonists on the mating induced inhibition of sexual responsivity in female golden hamsters were determined. Large doses of morphine consistently produced sedation and behavioral depression of responses to nociceptive stimuli. Smaller doses of morphine suppressed a measure of female sexual responding. The suppressive effects on sexual behavior were reversed by 4mg/kg of naloxone. The data suggest that morphine produces effects which are incompatible with full sexual functioning in female hamsters. The data from the five experiments with opioid antagonists suggest that opioid antagonist sensitive mechanisms do not play a critical role in modulating sexual behavior and do not account for the mating induced decreases in sexual responding in female hamsters. 1 reference.

001736 Nurmand, L. B.; Otter, M. Ya.; Vaser, E. E. Kafedra farmakologii Tartuskogo universiteta, Tartu, USSR **/The effect of some structural GABA analogues on the serotonin and dopaminergic mechanisms./** Vliyaniye nekotorykh strukturnykh analogov gamma-aminomaclyanoy kisloty na serotonin- i dofaminergicheskiye mekhanizmy. Farmakologiya i Toksikologiya. 43(3):288-291, 1980.

The behavioral and biochemical effects of some GABA analogues (fenibut, fepiron and sodium hydroxybutyrate) were studied in 400 male white mice. All the derivatives of GABA depressed the orientation and investigation activity of the mice. Only fepiron showed a tendency to depress aggressive behavior. Fepiron reduced, and fenibut increased the content of dopamine, and both substances increased the serotonin content and accelerated its metabolism by three times. Results show that, although these compounds exert similar behavioral effects, their effects on brain monoamine metabolism are different. Fenibut largely stimulates the serotoninergic, fepiron inhibits the dopaminergic, while sodium hydroxybutyrate affects both the monoaminergic processes. 12 references. (Journal abstract modified)

001737 Ohlsson, A.; Widman, M.; Carlsson, S.; Ryman, T.; Strid, C. Dept. of Pharmacognosy, Biomedical Center, Box 579, S-751 23 Uppsala, Sweden **Plasma and brain levels of delta6-THC and seven monooxygenated metabolites correlated to the cataleptic effect in the mouse.** Acta Pharmacologica et Toxicologica. 47(4):308-317, 1980.

Brain and plasma levels of unchanged delta6-tetrahydrocannabinol (delta6-THC), 7-hydroxy-delta6-THC, the five side chain hydroxylated delta6-THC derivatives, and 1alpha,2alpha-epoxyhexahydrocannabinol were studied in relation to the compounds' cataleptic effects in female NMRI mice. After i.v. administration of radiolabeled compounds in the range of 1.3 to 12.4mg/kg the correlation between brain/plasma concentrations and cataleptic effect was very good for all cannabinoids except delta6-THC and 1-hydroxy-delta6-THC. Structural features were more important than pharmacokinetic features in determining the psychoactivity of the cannabinoid metabolites. 32 references. (Author abstract modified)

001738 Olds, M. E.; Williams, K. N. California Institute of Technology, Division of Biology 216-76, Pasadena, CA 91125 **Self-administration of D-Ala2-Met-enkephalinamide at hypothalamic self-stimulation sites.** Brain Research. 194(1):155-170, 1980.

Male Sprague-Dawley rats fitted with a combination cannula and stimulation electrode in the lateral hypothalamus were allowed to lever-press for D-Ala2-Met-enkephalinamide (DALA) or vehicle injections. Results showed that the animals preferred DALA to the control injections and that 1 and 5mcg/mcl concentrations of the enkephalin analogue were more reinforcing than a 0.1mcg/mcl concentration of DALA. DALA-induced reinforcement was blocked by naloxone, but not by naltrexone. Intracranial self-stimulation trials conducted before and after the drug self-administration tests indicated the functional integrity of the reward system was not significantly altered by repeated self-administration tests. 55 references. (Author abstract modified)

001739 Olsauskas, Roma Stanislava. University of Health Sciences/Chicago Medical School **Neurochemical and behavioral effects of chronic d-amphetamine treatment in genetically obese (OBOB) mice. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1335-B, 1980. Ann Arbor, Univ. Microfilms No. 8022194, 169p., 1980.

Neurochemical and behavioral effects of chronic d-amphetamine (d-Amp, 3, 5, or 10mg/kg) treatment were investigated in genetically obese (OBOB) and lean female mice. d-Amp treatment produced a dose-dependent decrease in food intake and catecholamine levels in both lean and OBOB mice; when administered on the basis of bodyweight, d-Amp produced similar levels of food intake and hypothalamic norepinephrine (NE) in both. During recovery from treatment both food intake and NE returned to control levels following treatment with 3mg/kg d-Amp; consequently OBOB mice ate more and had significantly higher NE levels than lean mice. Following treatment with 10mg/kg lean mice showed rebound hyperphagia during recovery, but OBOB mice did not. When d-Amp was administered on a brain drug concentration basis, there was less suppression in food intake and in NE levels in OBOB as compared to lean mice. Results appeared to be independent of amphetamine-induced changes in either plasma glucose levels or body temperature. Results correlate hypothalamic NE levels to hypophagia in OBOB mice; this hypophagia may be a consequence of an abnormal presynaptic release mechanism that is manifested as elevated NE levels. (Journal abstract modified)

001740 Ortmann, R.; Waldmeier, P. C.; Radeke, E.; Felner, A.; Delini-Stula, A. Research Dept., Pharmaceuticals Division, CIBA-GEIGY Ltd., CH-4002 Basel, Switzerland **The effects of 5HT uptake- and MAO-inhibitors on L-5-HTP-induced excitation in rats.** Naunyn-Schmiedeberg's Archives of Pharmacology. 311(2):185-192, 1980.

The behavioral syndrome induced by L-5-hydroxytryptophan (L-5-HTP) in albino rats was used as an experimental model for the study of drug effects on the central serotonergic system. The relative potencies of selective 5-hydroxytryptamine (5-HT) uptake inhibitors in intensifying behavioral stimulation induced by L-5-HTP corresponded to their potencies in inhibiting 5-HT uptake in brain. The potentiation of the L-5-HTP syndrome by monoamine oxidase (MAO) inhibitors correlated with the inhibition of type-A MAO but not type-B in brain. In rats treated with the maximally inhibiting dose of a 5-HT uptake inhibitor, MAO inhibitors were still able to increase the intensity of the L-5-HTP syndrome. 28 references. (Author abstract modified)

001741 Osuide, G.; Wambebe, C. Dept. of Pharmacology, Faculty of Pharmaceutical Sciences, Ahmadu Bello University, Zaria, Nigeria **The effect of FLA-63 on pentobarbitone-induced sleep in the chick.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1638-1641).

The effects of FLA-63 on sleep induced in chicks by pentobarbitone (7 to 15mg/kg) are reviewed. Pentobarbitone produced sleep, reduced EMG activity, and synchronized the EEG of the hyperstriatum, optic tectum, and pontine reticular formation. FLA-63 produced a time-dependent biphasic effect on

gross behavior; an initial sedation (lasting 2 hours) was followed by hyperactivity (maximal at 5 hours) which was associated with increased EMG and EEG activities. FLA-63 (given 4 hours prior to injection of pentobarbitone) antagonized pentobarbitone-induced sleep. The antagonism of pentobarbitone sleep, increased EMG activity, and EEG activation observed with FLA-63 suggest that endogenous dopamine may subserve excitatory function in the chick. 6 references. (Author abstract modified)

001742 Palfai, Tibor; Walsh, Thomas J. Psychology Research Laboratory, Syracuse University, Syracuse, NY 13210 **Comparisons of the effects of guanethidine, 6-hydroxydopamine and diethyldithiocarbamate on retention of passive avoidance.** Pharmacology Biochemistry and Behavior. 13(6):805-809, 1980.

The effects of guanethidine, 6-hydroxydopamine (6-0HDA), and diethyldithiocarbamate (DDC) on retention of passive avoidance learning were investigated in mice. Depending on the dose levels, guanethidine and DDC produced time-dependent amnesia for a one-trial passive avoidance task. 6-OHDA given at any dose level or at any time interval before or after training did not result in retention deficits. These results are discussed in terms of the effects of these agents on peripheral biogenic amines and the possible role of these amines in memory formation. 43 references. (Author abstract modified)

001743 Palmour, R. M.; Pearce, C. Dept. of Genetics, University of California, Berkeley, CA 94720 **Behavioral and neurochemical studies of Lesch-Nyhan's syndrome.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 155-160).

The behavioral and neurochemical features of Lesch-Nyhan's syndrome, an X-linked recessive disorder marked by hyperuricemia and self-mutilation and by a complete deficiency of the enzyme hypoxanthine phosphoribosyltransferase (HPRT), were investigated. Hypothesizing that there may be a deficit of guanine nucleotides in the brains of Lesch-Nyhan children, levels of cyclic AMP and cyclic GMP were investigated in various regions of the rat brain following administration of theophylline. Although absolute levels of cyclic AMP or cyclic GMP may rise or fall depending on the brain region and dosage of the drug, a consistent increase in the ratio of cyclic AMP to cyclic GMP was observed in the hypothalamus, basal ganglia, and hippocampus of rats that responded to the pharmacological regimen with self-mutilation. These studies suggest that examination of neuroendocrine factors in patients with this disease is appropriate. 12 references. (Author abstract modified)

001744 Panksepp, Jaak. Dept. of Psychology, Bowling Green State University, Bowling Green, OH 43403 **Brief social isolation, pain responsivity, and morphine analgesia in young rats.** Psychopharmacology. 72(1):111-112, 1980.

Morphine analgesia and vocalizations induced by brief tail shock were measured in young rats that were either socially or individually housed. A single day of isolation increased tail shock-induced vocalizations, and in animals isolated for 3 or 4 days, morphine was less effective in reducing vocalizations than in socially housed animals. The data suggest that social contact can sustain endogenous analgesic processes in the body. The possibility that this effect is mediated by endogenous opiod activity is noted. 7 references. (Author abstract modified)

001745 Panksepp, Jaak; Bean, N. Jay; Bishop, Paul; Vilberg, Tom; Sahley, Tony L. Dept. of Psychology, Bowling Green State University, Bowling Green, OH 43403 **Opioid blockade and social comfort in chicks.** Pharmacology Biochemistry and Behavior. 13(5):673-683, 1980.

The role of brain opioid systems in emotional comfort obtained from peers was investigated in young chicks. When young chicks are separated from their normal social environment in groups, they distress vocalize (DV) less than when isolated alone. Opioid blockade with naloxone increased crying more in group tested chicks than individually tested ones. The serotonin receptor blocking agent methysergide and the cholinergic blocking agent atropine sulfate produced similar effects. The testing of birds in mirrored environments also produced a reduction of DV's, and all three receptor blocking agents augmented DV's more in mirrored environments than in mirrorless ones. However, in studies evaluating changes in this comfort response by facilitation of opiate, serotonin (5-HT), and acetylcholine (ACh) activity (with morphine, quipazine, and pilocarpine, respectively), only morphine was found to magnify the comforting effect of mirrors. The effects of naloxone on contact comfort, and the acquisition and expression of imprinting were further evaluated and opioid blockade reduced all these measures of social comfort. It is concluded, that endogenous opioid activity (and to a lesser extent, 5-HT, and ACh) contribute to the comfort which animals derive from their social environment. 10 references. (Author abstract modified)

001746 Park, R. N.; Hirst, M.; Gowdey, C. W. Hirst: Dept. of Pharmacology, University of Western Ontario, London, Ontario, Canada N6A 5C1 **The influence of single daily heroin injections on drinking patterns in the rat.** Canadian Journal of Physiology and Pharmacology. 58(11):1295-1299, 1980.

The effects of single daily heroin injections on water drinking patterns were investigated in male Sprague-Dawley rats. Licking behavior of these rats (individually housed in a controlled environment with a 12-hour lighting schedule and food and water available ad libitum) was recorded every 30 minutes. Bodyweight and 24-hour fluid intake were measured daily at 0800 hours, after which subcutaneous injection was given. The first injection of heroin caused a cessation of licking behavior followed by a bout of daytime drinking so that the percentage occurring during the light hours increased. This stimulated licking occurred progressively earlier as heroin injections were repeated. Total daily fluid intake and rate of weight gain during heroin treatment were not significantly different from those in the control period, although they tended to be less with the higher dose. Withdrawal from this dose led to mild transient hyperirritability during the first 36 hours and another change of licking behavior. Results suggest that the diurnal licking pattern of rats drinking ad libitum is especially vulnerable to disruption by heroin. 28 references. (Author abstract modified)

001747 Parker, Linda A. Division of Social Sciences, University of New Brunswick, Saint John, New Brunswick E2L 4L5, Canada **Conditioned suppression of drinking: a measure of the CR elicited by a lithium-conditioned flavor.** Learning and Motivation. 11(4):538-559, 1980.

The conditioned response (CR) elicited by an exposure to a lithium conditioned flavor (CS) was measured in a paradigm which closely approximated traditional conditioned suppression of licking. Rats were first trained to discriminate between a lithium paired flavor solution (CS) and an equally familiar, but safe, flavored solution (CSc). Then, while they consumed a differently flavored test solution, the rats were intraorally infused with either the CS or the CSc flavored solution. The immediate aftereffect of the CS exposure on consumption of the test solution (TS) measured the CR. The CS exposure suppressed the consumption of both a novel flavored TS and an unflavored water TS. The strength of the suppressive CR was influenced by the nature of the TS and by the dose of the lithium unconditioned stimulus. 36 references. (Author abstract)

001748 Patel, V. K.; Jindal, M. N.; Patel, N. B.; Venkatakrishna-Bhatt, H. Dept. of Pharmacology, Government Dental College and Hospital, Ahmedabad 380016 Gujarat, India **Reduction of barbiturate anaesthesia by new glutarimide compounds in mice.** Psychopharmacology. 71(1):101-103, 1980.

The reduction of barbiturate anesthesia by new glutarimide compounds in mice is reported. Newly synthesized glutarimide compounds at doses of 4,8, and 16mg/kg (i.p.) reduced the duration of sleep induced by pentobarbitone in mice. Compounds 1 to 7 and 21 were more potent than the other compounds and their activity was comparable to the reference drug, bemegride. The structure activity relationship for the decrease in duration of barbiturate anesthesia caused by the various groups of these compounds was mainly found to be inversely related to the length of the alkyl side chain at position four of the beta carbon atom. It was also shown that the presence of piperidine, diethylamine, and morpholine moieties attached to 3,5-dicyanoglutarimide was partly responsible for the reduction in barbiturate anesthesia by these compounds. 10 references. (Author abstract modified)

001749 Perez-Guaita, Maria de Fatima; Chiaraviglio, Emma. Instituto de Investigacion Medica, Mercedes y Martin Ferreyra, Casilla de Correo 389, 5000 Cordoba, Argentina **Effect of prostaglandin E1 and its biosynthesis inhibitor indomethacin on drinking in the rat.** Pharmacology Biochemistry and Behavior. 13(6):787-792, 1980.

The effects of prostaglandin-E1 (PGE1) and its biosynthesis inhibitor indomethacin on drinking behavior were investigated in rats. Injection of PGE1 into the third brain ventricle (3rd b.v.) inhibited the water-deprivation-induced water intake in a dose-related fashion. PGE1 also inhibited the intake of 1.8% sodium chloride in rats depleted of body sodium by intraperitoneal dialysis, and of food in food-deprived rats during a 60-min test period. Prostaglandin-E1 depressed the dipsogenic effect of angiotensin-II (AII) or carbachol injected through the same cannula. Water-deprived rats pretreated with indomethacin, in two different doses, showed enhanced water intake. Pretreatment with indomethacin also enhanced the dipsogenic effect of various doses of AII injected into the 3rd b.v. The antagonistic action of PGE1 on water deprivation, or II-induced water intake, and the enhancement of water intake after blocking prostaglandin synthesis, suggest the involvement of prostaglandin in the regulaton of thirst. 20 references. (Author abstract modified)

001750 Peters, Joseph E.; Steele, William J. Dept. of Pharmacology, College of Medicine, University of Iowa, Iowa City, IA 52242 **Pentylenetetrazol seizure threshold: a quantitative measure of ethanol dependence in rats.** Life Sciences. 27(25&26):2605-2610, 1980.

The chronic administration of ethanol in large amounts to rats was found to give rise to an increasing degree of withdrawal hyperexcitability as demonstrated by reduction in the seizure threshold to the convulsant drug pentylenetetrazol. The latter response is reasonably specific and is a more sensitive measure of physical dependence in rats than the changes in behavior or susceptibility to audiogenic seizures. Results indicate that the induction of physical dependence on ethanol in rats can be objectively and quantitatively followed by assessing the intensity of withdrawal hyperexcitability with pentylenetetrazol. 14 references. (Author abstract)

001751 Petty, Frederick; Sherman, Arnold D. Dept. of Psychiatry, College of Medicine, University of Iowa, 500 Newton Road, Iowa City, IA 52242 **Reversal of learned helplessness by imipramine.** Communications in Psychopharmacology. 3(5):371-373, 1979.

Exposure to random, uncontrollable shock produced a subsequent deficit in escape performance in male Sprague-Dawley rats. This learned helplessness persisted for 12 to 13 days in saline-treated controls, but could be reversed in 4 days in animals given multiple injections of imipramine. The delayed onset of action of imipramine in this experimental model of depression parallels the time lag generally observed for clinical response to antidepressant therapy. 7 references. (Author abstract modified)

001752 Piccirillo, M.; Alpert, J. E.; Cohen, D. J.; Shaywitz, B. A. Cohen: Yale Child Study Center, 333 Cedar St., New Haven, CT 06510 **Amphetamine and maternal behavior: dose response relationships.** Psychopharmacology. 70(2):195-199, 1980.

Dose response relationships in the area of amphetamine effect on maternal behavior were investigated. Primiparous rats received i.p. injections of d-amphetamine when offspring reached 3 to 4 days and 10 to 11 days of age. Multidimensional analysis of their maternal behavior revealed that at doses as low as 0.25mg/kg, amphetamine has a disruptive effect on a variety of maternal behaviors. The impact of amphetamine on nursing was significantly greater at pup ages of 3 to 4 days than at 10 to 11 days. Drug-induced augmentation of arousal exceeding optimal levels for adequate care-giving and locomotor stimulation incompatible with elements of maternal behavior may account for dose-dependent impairment in the range of 0.25 to 1.50mg/kg d-amphetamine. 20 references. (Author abstract modified)

001753 Poling, Alan; Appel, James B. Western Michigan University, Kalamazoo, MI 49008 **Procedures for reducing drug intake: nonhuman studies.** In: Thompson, T., Advances in behavioral pharmacology. V. 2. New York, Academic Press, 1979. 263 p. (p. 209-227).

Manipulations which have been used to attenuate the self-administration of drugs by animals are reviewed with regard to human drug abuse. Drug-reinforced responding, which is similar to responding reinforced by other stimuli, is sensitive to a large number of environmental variables. Issues covered include: punishment of drug-reinforced responding; reduction of intake of self-administered compounds by procedures not involving punishment; effects of reinforcement schedule on drug intake; discriminative stimuli and drug intake; and the relationship between nonhuman studies and human drug abuse. 71 references.

001754 Poling, Alan; Appel, James B. Behavioral Pharmacology Laboratory, Dept. of Psychology, University of South Carolina, Columbia, SC 29208 **Drug effects on the performance of pigeons under a negative automaintenance schedule.** Psychopharmacology. 60(2):207-210, 1979.

Drug effects on the performance of pigeons under a negative automaintenance schedule were investigated. Pigeons were exposed to a negative automaintenance schedule in which food was delivered following brief key illumination only if the illuminated key was not contacted; contact of the lighted key prevented food delivery. All Ss emitted some responses under this procedure when drugs were not given. However, the number of responses was less than that which occurred under an automaintenance procedure in which food followed key illumination regardless of the bird's behavior. Under the negative automaintenance procedure, acute administration of atropine, d-amphetamine, and morphine reduced in a dose-dependent manner the percentage of key illuminations in which Ss contacted the lighted key. Diazepam increased the percentge of key illuminations during which contact response occurred. 22 references. (Author abstract modified)

001755 Pope, S. G.; Dean, P.; Redgrave, P. Dept. of Psychology, University of Sheffield, Sheffield S10 2TN, England **Dissociation of d-amphetamine-induced locomotor activity and stereotyped behaviour by lesions of the superior colliculus.** Psychopharmacology. 70(3):297-302, 1980.

To investigate the role of the nigrotectal pathway in the expression of the behavioral effects of increased dopamine transmission, the behavior of rats with lesions of the superior colliculus was studied in open-field and holeboard after systemic administration of d-amphetamine. The rats with collicular lesions had higher locomotor activity scores than controls after saline injections, and after all doses of amphetamine studied; the difference was particularly marked at the highest doses used (16mg/kg and 24mg/kg). Stereotyped behavior, on the other hand, was less pronounced in the rats with collicular lesions, who unlike controls rarely showed stereotyped sniffing, head waving, or forepaw padding while moving about in either apparatus, and never licked or gnawed in the holeboard. This evidence suggests that the nigrotectal pathway may play a role in the expression of some of the stereotyped behaviors observed after the administration of dopamine agonists, but that it is not necessary for the increased locomotor activity produced by such drugs. 38 references. (Author abstract)

001756 Puglisi-Allegra, Stefano; Mandel, Paul. Istituto di Psicobiologia e Psicofarmacologia, C.N.R. Via Reno, I-00198 Roma, Italy **Effects of sodium n-dipropylacetate, muscimol hydrobromide and (R,S) nipecotic acid amide on isolation-induced aggressive behavior in mice.** Psychopharmacology. 70(3):287-290, 1980.

To investigate the role of GABAergic systems in isolation-induced aggressive behavior in mice, an inhibitor of GABA transaminase (GABA-T), sodium n-dipropylacetate, a GABA agonist (muscimol hydrobromide), and an inhibitor of GABA uptake (R,S) nipecotic acid amide, were administered to DBA/2 isolated aggressive mice throughout three successive daily experimental sessions. Aggressive responses, measured by an automated device, were inhibited by the highest doses of the three drugs in each daily session. At the lowest doses, sodium n-dipropylacetate and nipecotic acid amide failed to inhibit aggression in the first session while they were effective in the subsequent sessions. Muscimol was effective in the first session but did not differ significantly from saline in the second and third session. The highest doses of these three drugs did not affect spontaneous motor activity, indicating that the observed drug effects are rather specific. 14 references. (Author abstract modified)

001757 Rawlins, J. N. P.; Feldon, J.; Salmon, P.; Gray, J. A.; Garrud, P. Gray: Dept. of Experimental Psychology, South Parks Road, Oxford 0X1 3UD, England **The effects of chlordiazepoxide HCl administration upon punishment and conditioned suppression in the rat.** Psychopharmacology. 70(3):317-322, 1980.

The effects of chlordiazepoxide HCl (CDP) administration upon punishment and conditioned suppression in the rat were investigated. Rats were trained to lever-press for sucrose on a random interval 64-sec schedule. During a 55-min session there were four 3-min intrusion periods, signalled by a flashing light, during which one group received response independent footshock and another group received response contingent footshock on the same schedule. CDP alleviated response suppression equally in both groups. In experiment 2, all animals had the same shock intensity, producing greater response suppression in the response contingent shock groups. CDP alleviated response suppression more in the response contingent shock groups, significantly so at 5mg/kg, nonsignificantly at 1mg/kg. These results suggest that previous reports that CDP differentially alleviates the response suppression produced by response contingent shock are an artifact of rate dependency. 11 references. (Author abstract modified)

001758 Rebec, George V.; Segal, David S. Dept. of Psychology, Indiana University, Bloomington, IN 47405 **Apparent tolerance to some aspects of amphetamine stereotypy with long-term treatment.** Pharmacology Biochemistry and Behavior. 13(6):793-797, 1980.

A series of experiments investigating whether an increase in dopamine receptor sensitivity is the primary mechanism underlying the behavioral alterations associated with multiple amphetamine injections is described. Detailed observations of the focused stereotyped behaviors produced by amphetamine revealed that although some components were enhanced with long-term treatment, others were reduced. Thus, whereas repeated administration of 2.5mg/kg d-amphetamine produced a progressive increase in repetitive head and limb movements, long-term treatment with 5.5mg/kg d-amphetamine resulted in a reduction of licking and biting behaviors (oral stereotypies). These results, which suggest that different mechanisms mediate the various components of focused stereotypy, provide evidence against the supersensitivity hypothesis. In fact, the apparent tolerance that develops to oral stereotypies may reflect a decrease in dopamine receptor sensitivity, since repeated amphetamine administration also reduces the oral stereotypies produced by 0.5mg/kg or 2.0mg/kg apomorphine, a direct acting dopamine agonist. 42 references. (Author abstract modified)

001759 Ridley, R. M.; Weight, M. L.; Haystead, T. A. J.; Baker, H. F. Clinical Research Centre, Division of Psychiatry, Watford Road, Harrow, Middlesex HA1 3UJ, England **Importance of the response requirement in successive discrimination.** Psychopharmacology. 69(3):271-273, 1980.

The effects of amphetamine on go here/go there performance in marmosets were investigated. Marmosets were trained on a task involving simultaneous and successive visual discrimination performance where responses are required on all trials. Performance on this task was not affected by low doses of amphetamine. From this, it is concluded that amphetamine does not cause a narrowing of attention and that the disruptive effect of amphetamine on the go/no-go successive discrimination task already reported is due to a loss of response inhibition rather than to difficulties in the recognition of stimuli presented without a comparison stimulus. 11 references. (Author abstract modified)

001760 Risner, M. E.; Jones, B. E. NIDA, Division of Research, Addiction Research Center, Lexington, KY 40583 **Intravenous self-administration of cocaine and norcocaine by dogs.** Psychopharmacology. 71(1):83-89, 1980.

The potency of cocaine, relative to d-amphetamine, to initiate and maintain intravenous self-administration behavior by dogs was examined. Response contingent infusions of cocaine and d-amphetamine were available during daily 4 hr sessions on a FR1 reinforcement schedule. By comparing the dose/response curves of the two drugs, it was found that 1 mg of amphetamine is equivalent to 5.3 mg of cocaine. In a second experiment, pretreatment with the alpha-adrenergic antagonist phenoxybenzamine did not produce any appreciable changes in responding for cocaine by dogs. In contrast, when the same animals were pretreated with dopaminergic antagonist pimozide, subsequent responding for cocaine was increased in a dose-dependent manner. In a third experiment, it was determined that norcocaine, the N-demethylated metabolite of cocaine, would maintain self-administration behavior by dogs when it was substituted for cocaine. As expected, when saline was substituted for cocaine, responding was not maintained. 44 references. (Author abstract modified)

001761 Romaniuk, Andrzej; Golebiewski, Henryk. Dept. of Animal Physiology, Institute of Physiology and Cytology, University of Lodz, Rewolucji 1905 r. No. 66, 90-222 Lodz, Poland **Adrenergic modulation of the hypothalamic cholinergic mechanism in the control of emotional-defensive behavior in the cat.** Acta Neurobiologiae Experimentalis. 39(5):313-326, 1979.

The effects of drugs influencing the activity of the hypothalamic noradrenergic system on the carbachol-induced emotional/defensive response were investigated in 16 cats. Intrahypothalamic injections of noradrenaline, amphetamine, and reserpine did not produce any changes in cats' behavior. Injections of carbachol into the same hypothalamic loci, following the injections of noradrenaline, amphetamine, or reserpine evoked all the characteristic symptoms of emotional/defensive behavior. However, a strong decrease in the number of growls and the duration of growling was observed when reserpine injections preceded the injections of carbachol into the same hypothalamic areas. Results indicate that emotional/defensive behavior cannot be triggered by activation of the hypothalamic noradrenergic system. However, emotional/defensive behavior induced by cholinergic stimulation of the hypothalamus may be modified by changes in the activity of the hypothalamic noradrenergic system. 54 references. (Author abstract modified)

001762 Rudeberg, C. Wander Research Institute (a Sandoz Research Unit), P.O. Box 2747, CH-3001 Berne, Switzerland **The role of dopamine in the hypermotility induced by H-77/77 (4,alpha-dimethyl-m-tyramine) in mice.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 119-122).

Evidence is presented that dopamine plays a dominant role in mediating the hypermotility produced by 4,alpha-dimethyl-m-tyramine (H-77/77) in mice. Since clozapine and thioridazine, as well as all classical neuroleptic agents, block dopamine dependent hypermotility, this model is considered useful as a simple screening test for antischizophrenic drugs, including those which do not block apomorphine and amphetamine stereotypies. 6 references. (Author abstract modified)

001763 Sahgal, Arjun; Hulme, Miriam; Iversen, Susan D. MRC Neuroendocrinology Unit, Newcastle General Hospital, Westgate Road, Newcastle upon Tyne, NE4 6BE, England **Amylobarbitone and forgetting.** Psychopharmacology. 71(2):189-193, 1980.

The effects of sodium amylobarbitone (SAB) on acquisition and storage of information were studied in pigeons. To control for performance differences related to the amount of information entered in storage, the performance of control birds was lowered. Nonetheless, rates of forgetting were similar in SAB and control groups. Results suggest that SAB affects the acquisition of information, but not its subsequent storage or retrieval. 22 references. (Author abstract modified)

001764 Samanin, R.; Cervo, L.; Rochat, C. Istituto di Ricerche Farmacologiche Mari Negri, Via Eritrea, I-62-20157 Milan, Italy **Changes of physical morphine dependence in rats chronically treated with drugs acting on brain 5-hydroxytryptamine.** Journal of Pharmacy and Pharmacology. 32(2):150, 1980.

The role of 5-hydroxytryptamine (5-HT) in the development of physical dependence on morphine was studied in male CD-COBS rats. Animals were made dependent by chronic graded doses of morphine and treated concomitantly with ()-fenfluramine, a 5-HT releaser and uptake inhibitor, or methergoline, a central 5-HT antagonist. Jumping during naloxone precipitated withdrawal was significantly increased by repeated fenfluramine treatment and markedly reduced by methergoline. Results suggest that 5-HT antagonists may be useful in reducing the development of physical dependence on morphine. 12 references.

001765 Sanger, D. J.; McCarthy, P. S. Dept. of Pharmacology, Pharmaceutical Division, Reckitt and Colman, Dansom Lane, Hull HU8 7DS, England **Differential effects of morphine on food and water intake in food-deprived and freely-feeding rats.** Psychopharmacology. 72(1):103-106, 1980.

In two experiments, the effects of a range of doses of morphine on the food and water consumption of rats were studied. Results of the first experiment show that in 24-hour food-deprived rats, morphine reduced levels of food and water intake. The duration of these actions was dependent upon dose, with only the highest dose (30mg/kg) producing any effect persisting for longer than 4 hours. In contrast, a second experiment showed that morphine increased levels of food and water intake in nondeprived animals. The effect on food intake was most apparent at 2 hours and 4 hours postadministration; water intake remained above control levels for over 6 hours. Results indicate that the actions of morphine on ingestion of food and water are affected by food deprivation, and the results are consistent with the hypothesized role of endogenous opiates in the mediation of such behavior. 23 references. (Author abstract)

001766 Sansone, M.; Oliverio, A. Istituto di Psicobiologia e Psicofarmacologia, C.N.R., 1, via Reno - 00198 Rome, Italy **Effects of chlordiazepoxide-morphine combinations on spontaneous locomotor activity in three inbred strains of mice.** Archives Internationales de Pharmacodynamie et de Therapie. 247(1):71-75, 1980.

Spontaneous locomotor activity was studied in three strains of mice treated with morphine and chlordiazepoxide. Chlordiazepoxide enhanced morphine-induced locomotor stimulaton in C57BL/6 and BALB/c mice and counteracted the depressant effect of morphine in DBA/2 mice. The stimulatory effects of the chlordiazepoxide/morphine combination may reflect increased catecholaminergic activity. 14 references. (Author abstract modified)

001767 Sansone, Mario. Istituto di Psicobiologia e Psicofarmacologia, C. N. R. via Reno, I-00198 Roma, Italy **Influence of benzodiazepine tranquilizers on amphetamine-induced locomotor stimulation in mice.** Psychopharmacology. 71(1):63-65, 1980.

Four benzodiazepine tranquilizers have been tested, alone or in combination with amphetamine, on spontaneous locomotor activity of C57BL/6 mice. Amphetamine-induced locomotor stimulation was enhanced by chlordiazepoxide, diazepam, and medazepam, but not by bromazepam. Results indicate that benzodiazepine derivatives may be somewhat differentiated on the basis of their interactions with amphetamine. Results lend further support to the supposition that catecholaminergic systems are involved in the behavioral stimulant effects of the combination of amphetamine and benzodiazepines. 8 references. (Author abstract modified)

001768 Sansone, Mario. Istituto di Psicobiologia e Psicofarmacologia, C.N.R. via Reno, I-00198 Rome, Italy **Influence of benzodiazepine tranquilizers on scopolamine-induced locomotor stimulation in mice.** Psychopharmacology. 71(3):243-245, 1980.

Scopolamine-induced locomotor stimulation in male BALB/c mice was enhanced by chlordiazepoxide, diazepam, and medazepam, but not by bromazepam. The four benzodiazepines have previously shown similar effects on amphetamine-induced locomotor stimulation. 5 references. (Author abstract modified)

001769 Sanyal, A. K.; Srivastava, D. N.; Bhattacharya, S. K. Dept. of Pharmacology, Institute of Medical Sciences, Banaras

Hindu University, Varanasi, India **The antinociceptive effect of intracerebroventricularly administered prostaglandin E1 in the rat.** Psychopharmacology. 60(2):159-163, 1979.

The antinociceptive effect of intracerebroventricularly administered prostaglandin E1 in the rat was investigated. Prostaglandin (PG)-E1 produced a dose-dependent antinociceptive effect by the radiant heat and pressure methods, and potentiated the antinociceptive action of morphine in the electrical stimulation method. The antinociceptive action of PGE1 was not evident in 5,6-dihydroxytryptamine-pretreated rats, suggesting that this effect is serotonin mediated. Results confirm the antinociceptive action of PGE1 and suggest that, unlike its peripheral action, the central action of PGE1 results in suppression of nociceptive responses which may be serotonin mediated. 22 references. (Author abstract modified)

001770 Schechter, Martin D. Dept. of Pharmacology, Northeastern Ohio Universities, College of Medicine, 4209 State Route 44, Rootstown, OH 44272 **Lack of effect of choline and narcotic antagonists upon apomorphine discrimination.** European Journal of Pharmacology. 68(2):187-191, 1980.

The effects of i.p. choline chloride (79mg), haloperidol (0.02mg/kg), naloxone (10mg/kg), and naltrexone (10mg/kg) were studied in male Sprague-Dawley rats trained to discriminate apomorphine (0.16mg/kg) from saline. The rats' ability to discriminate apomorphine was significantly impaired by the other drugs. Results are discussed in relation to mechanisms underlying the effects of narcotic and cholinomimetic drugs on behaviors mediated by dopamine. 18 references. (Author abstract modified)

001771 Schenk, Susan; Williams, Terrence; Coupal, Alain; Shizgal, Peter. Ctr. for Research on Drug Dependence, Dept. of Psychology, Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, PQ H3G 1J9, Canada **A comparison between the effects of morphine on the rewarding and aversive properties of lateral hypothalamic and central gray stimulation.** Physiological Psychology. 8(3):372-378, 1980.

Rats were trained to initiate and terminate lateral hypothalamic or dorsal raphe stimulation in order to assess the effects of various doses of morphine on self-stimulation (SS) and stimulation escape (SE). The drug produced a strong attenuation of SE at both placements. This effect did not show tolerance with repeated injections of morphine. Similarly, SS was depressed for 1 to 2 hours following drug injection, an effect which did tolerate with chronic treatment. A drug produced facilitation of SS was observed in some subjects, although the magnitude of this effect varied across animals. The data are interpreted to suggest that morphine acts on both the substrate for SS and the substrate for SE, but in opposite directions. 23 references. (Author abstract modified)

001772 Sershen, Henry; Reith, Maarten E. A.; Lajtha, Abel. Center for Neurochemistry, Rockland Research Institute, Ward's Island, NY 10035 **The pharmacological relevance of the cocaine binding site in mouse brain.** Neuropharmacology. 19(11):1145-1148, 1980.

The potencies of cocaine and various cocaine analogs in inhibiting the specific binding of (3H)-cocaine to male BALB/cBy mouse brain membranes were compared with their pharmacological potencies. The order of binding potencies was correlated with pharmacological effects on locomotor activity and behavior, but not with local anesthetic activities. Results suggest that the cocaine binding site in brain mediates central rather than local anesthetic actions of cocaine and its analogs. 7 references. (Author abstract modified)

001773 Sewell, R. D. E.; Jawaharlal, K. Dept. of Applied Pharmacology, Polytechnic of Wales, Welsh School of Pharmacy, UWIST, King Edward VII Ave., Cardiff CF1 3NU, Wales **Antagonism of 2-deoxy-D-glucose-induced hyperphagia by naloxone: possible involvement of endorphins.** Journal of Pharmacy and Pharmacology. 32(2):148-149, 1980.

Naloxone markedly attenuated the hyperphagia induced by 2-deoxy-D-glucose (2-DG) in male Wistar rats. The reduction in food intake was followed by a compensatory increase in food consumption 3 to 4 hours after naloxone and 2-DG. Naloxone also reversed the sedative effects of 2-DG. Results suggest that the impaired glucose availability induced by 2-DG may lead to the release of an endogenous opioid, such as beta-endorphin. However, doses of 2-DG that induce hyperphagia did not produce analgesia. 10 references.

001774 Shalaby, Ismail A.; Spear, Linda Patia. Spear: Dept. of Psychology, SUNY, Binghamton, NY 13901 **Psychopharmacological effects of low and high doses of apomorphine during ontogeny.** European Journal of Pharmacology. 67(4):451-459, 1980.

The effects of low (0.05 and 0.1mg/kg) and high (1.0 and 3.0mg/kg) doses of apomorphine on locomotor activity and stereotypy were studied in developing Sprague-Dawley rats. High doses of apomorphine increased matrix crossings and locomotor movements at all ages tested (7, 14, 21, 28, and 35 days). Apomorphine also induced wall climbing in 7 and 14-day-old animals, but not in older rats. Low doses suppressed matrix crossings at 28 and 35 days of age and suppressed locomotor movements at 35 days of age. Stereotyped sniffing was not significantly increased by apomorphine until 21 days of age. Results indicate that dopaminergic postsynaptic receptors mature prior to autoreceptors. 30 references. (Author abstract modified)

001775 Sherman, A. D.; Petty, F. Neurochemical Research Laboratory, Dept. of Psychiatry, University of Iowa, Iowa City, IA 52242 **Neurochemical basis of the action of antidepressants on learned helplessness.** Behavioral and Neural Biology. 30(2):119-134, 1980.

The effects of desipramine, GABA, norepinephrine, and serotonin on the development of learned helplessness in male Sprague Dawley rats were examined. Learned helplessness could be prevented by administration of desipramine only into the frontal neocortex, hippocampus, or lateral geniculate body, by administration of GABA only into these same areas, or by norepinephrine injected only into the hippocampus. It could be reversed by desipramine in the frontal neocortex, GABA in either the hippocampus or lateral geniculate body, or by serotonin in the frontal neocortex or septum. The reversal of learned helplessness by cortical desipramine restored a deficit in septal release of serotonin and could be prevented by administration of bicuculline into the hippocampus but not the lateral geniculate body. The mechanisms of a GABA modulated release of serotonin in the septum and the GABA modulated release of norepinephrine in the hippocampus are proposed by the antidepressant actions of desipramine. 43 references. (Author abstract modified)

001776 Sieber, Barbara; Frischknecht, Hans R.; Waser, Peter G. I.C.I.P.E. Research Centre, P. O. Box 30772, Nairobi, Kenya **Behavioral effects of hashish in mice: III. social interactions between two residents and an intruder male.** Psychopharmacology. 70(3):273-278, 1980.

The acute and subchronic effects of hashish extract (20mg delta9-tetrahydrocannabinol/kg) on the social interactions between two drug residents and an untreated intruder male mouse were investigated. In this analysis, 28 different behavioral elements were recorded. A single drug application suppressed all

categories of behavior, except submissive behavior and flight, in dominant and subordinate residents. An elevated total activity due to an increase in nonsocial activities, was observed in the untreated intruder males. On introduction of an untreated male after the fourth drug treatment of the residents, the drugged males showed tolerance to the sedative and most of the other behavioral effects of the drug, and intruder males behaved quite normally. The formation of dominant/subordinate relations within the group was not influenced by single or repeated drug treatment. The effects of hashish on social, especially aggressive behavior of males are discussed in relation to previous studies. 20 references. (Author abstract modified)

001777 Sieber, Barbara; Frischknecht, Hans R.; Waser, Peter G. I.C.I.P.E. Research Centre, P. O. Box 30772, Nairobi, Kenya **Behavioral effects of hashish in mice: I. social interactions and nest-building behavior of males.** Psychopharmacology. 70(2):149-154, 1980.

The acute and subchronic effects of hashish extract (20mg delta9-tetrahydrocannabinol) on the behavior of male mice encountering a control partner were studied by ethological methods. After four applications, tolerance to the sedative effects had developed and behavioral drug effects were recognized. Drugged males showed an increase in nonsocial activities as well as in submissive behavior and flight, whereas social investigation was less frequent. Sexual and aggressive behavior was not significantly affected by the drug, and immobility no longer occurred. In spite of behavioral changes after a single or repeated drug treatment, drugged males became dominant in about half the experiments. The nest building behavior of males was disturbed in the same way after one or four drug applications. Drugged males generally refrained from carrying and working up the nesting material. 26 references. (Author abstract modified)

001778 Siegfried, Bert; Bures, Jan. Institute of Pharmacology, University of Zurich, Zurich, Switzerland **Handedness in rats: blockade of reaching behavior by unilateral 6-OHDA injections into substantia nigra and caudate nucleus.** Physiological Psychology. 8(3):360-368, 1980.

Unilateral 6-hydroxydopamine (6-OHDA) was injected into the nigrostriatal system of rats in three experiments to examine the lateralized reaching for food habit (handedness). In Experiment 1, injections of 6-OHDA into the substantia nigra ipsilateral to the preferred forelimb had no effect on the overlearned instrumental reaction, however reaching was blocked 15 min after contralateral injection of the neurotoxin and remained suppressed for the 8 days of testing. At the same time retrieval of food with the nonpreferred forepaw significantly increased while behaviors like grasping, grooming, or holding food pellets were intact in the forepaw. In Experiment 2 injections of 6-OHDA into the caudate nucleus contralateral to the performing forelimb initially blocked handedness similarly as in Experiment 1; however, in contrast to nigral injections, reaching recovered within 6 days. In Experiment 3, 1 month after a unilateral 6-OHDA lesion of substantia nigra, naive rats acquired the reaching for food habit with the paw ipsilateral to the lesion. It is concluded that the blockade of handedness produced by unilateral 6-OHDA lesions of substantia nigra is not due to paralysis of the forelimb but to faulty integration of the contralateral somatosensory signals with contralateral motor patterns. 42 references. (Author abstract modified)

001779 Silverman, Peter B.; Ho, Beng T. Texas Research Institute of Mental Sciences, Houston, TX 77030 **p-Chloroamphetamine: evaluation of a brain metabolite.** Communications in Psychopharmacology. 3(5):291-294, 1979.

The effect of 3,4-dimethoxyamphetamine (DMA), a metabolite of p-chloramphetamine (PCA), on motor activity and serotonin depletion were studied in male Sprague-Dawley rats. At doses equimolar with active doses of PCA, DMA showed no significant activity on either measure after systemic or intraventricular administration. Results suggest that DMA is not an active metabolite of PCA. 8 references. (Author abstract modified)

001780 Simmons, William H.; Ritzmann, Ronald F. Dept. of Physiology and Biophysics, University of Illinois, Medical Center, Chicago, IL 60612 **An inhibitor of opioid peptide degradation produces analgesia in mice.** Pharmacology Biochemistry and Behavior. 13(5):715-718, 1980.

Bacitracin, a known inhibitor of brain peptidases which degrade the enkephalins and endorphins, was found to produce dose-dependent analgesia in mice (measured by the tail flick assay) when injected into the lateral ventricle of the brain. The analgesic response peaked at 15 min postinjection but was reduced to control levels by 3.5 hours. Naloxone reversed the analgesic response to bacitracin, suggesting that opiate receptors may be involved. It is proposed that bacitracin produces analgesia by preventing the enzymatic destruction of endogenously-released opioid peptides. 30 references. (Author abstract modified)

001781 Sinyor, D.; Switzman, L.; Amit, Z. Center for Research on Drug Dependence, Concordia University, 1455 de Maisonneuve Blvd. W., Montreal, Quebec H3G 1M8, Canada **ACTH potentiates morphine-induced conditioned taste aversion.** Neuropharmacology. 19(10):971-973, 1980.

The effects of adrenocorticotropic hormone (ACTH) on morphine-induced conditioned taste aversion were investigated in rats. Rats received intraperitoneal injections of ACTH along with one of four doses of morphine in a conditioned taste aversion paradigm. The ACTH treatment resulted in a potentiation of a subthreshold dose of morphine to elicit a conditioned taste aversion. With the larger doses of morphine, no further enhancement of the aversion by ACTH was observed. It is suggested that it is unlikely that these effects are due to the action of ACTH on an opiate receptor system, and probably reflect altered attention to particular components of the narcotic cue. 7 references. (Author abstract modified)

001782 Skingle, M.; Tyers, M. B. Pharmacology Dept., Glaxo Group Research Ltd., Ware, Hertfordshire, England **Further studies on opiate receptors that mediate antinociception: tooth pulp stimulation in the dog.** British Journal of Pharmacology. 70(2):323-327, 1980.

Nociceptive responses to electrical stimulation of the tooth pulp in conscious dogs were inhibited by mu-agonists (morphine, codeine, and dextropropoxyphene) and kappa-agonists (buprenorphine and (-)-5,9-dimethyl-2-(tetrahydrofurfuryl)-2'-hydroxy-6,7-benzomorphan. The potencies of these drugs in the dog were similar to their antinociceptive potencies against noxious pressure and chemical stimulation in rodents. Substance-P may be the neurotransmitter at the primary afferent terminals in nociception from electrical stimulation of tooth pulp and noxious chemical or pressure stimulation of the skin. 10 references. (Author abstract modified)

001783 Slater, P. Dept. of Physiology, University of Manchester, Manchester M13 9PT, England **Circling produced by serotonin and dopamine agonists in raphe lesioned rats: a serotonin model.** Pharmacology Biochemistry and Behavior. 13(6):817-821, 1980.

The serotonin (5-HT) receptor agonist quipazine and 5-methoxy-N,N-dimethyltryptamine were found to cause slow, contra-

lateral circling, which was not dose related, when given to rats with an asymmetric, electrolytic lesion of the midbrain medial raphe nucleus. No circling was recorded after administration of fenfluramine, a compound that releases 5-HT. The dopamine drugs apomorphine and d-amphetamine caused vigorous circling in raphe lesioned rats which was increased further by quipazine but antagonized by fenfluramine. The effects of the 5-HT drugs on d-amphetamine circling were closely dose related. Results suggest that modulation of d-amphetamine circling by 5-HT agonists in rats with a specific, asymmetric 5-HT lesion could provide the basis for a 5-HT rotation model. 24 references. (Author abstract modified)

001784 Slater, P.; Blundell, C. Dept. of Physiology, Medical School, University of Manchester, Manchester M139PT, England **The effects of intraventricular 6-hydroxydopamine and 5,6-dihydroxytryptamine on morphine induced locomotor stimulation.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(3):219-224, 1980.

The effects of intraventricular injections of 6-hydroxydopamine (6-OHDA) and 5,6-dihydroxytryptamine (5,6-DHT) on morphine induced locomotor stimulation were studied in female Sprague-Dawley rats and in female albino mice. Pretreatment with 6-OHDA or 5,6-DHT significantly reduced peak locomotor stimulation and depleted cerebral catecholamines (particularly noradrenaline) and 5-hydroxytryptamine in grouped mice given i.p. injections of morphine. Morphine hyperactivity was restored to near normal levels when a monoamine oxidase inhibitor (which enhanced dopamine depletion) was also used. Pretreatment with 6-OHDA or 5,6-DHT did not affect the peak locomotor response to d-amphetamine in mice, but did shorten the response; pretreatment with 6-OHDA and the MAO inhibitor potentiated the peak locomotor response. In rats, morphine induced a period of reduced activity followed by hyperactivity. The hyperactivity was only slightly diminished by 6-OHDA or 5,6-DHT, but was almost completely abolished by 6-OHDA combined with an MAO inhibitor. 37 references. (Author abstract modified)

001785 Slater, P.; Longman, D. A. Dept. of Physiology, University of Manchester, School of Medicine, Manchester M13 9PT, England **Effects of intrapallidal opiate receptor agonists on striatally evoked head turning.** Neuropharmacology. 19(11):1153-1156, 1980.

Contralateral head turning evoked by striatal stimulation in female Sprague-Dawley rats was not altered by intrapallidal or intraperitoneal injections of morphine, leucine enkephalin, or the analog, D-ala2,D-leu5-enkephalin. However, ethylketocyclazocine caused a pronounced, naloxone-sensitive slowing of the motor response after injection by either route. Results suggest the presence of opiate kappa receptors in the rat globus pallidus. 9 references. (Author abstract modified)

001786 Slifer, Barbara E. University of Wyoming **Drug effects on schedule-induced behaviors. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1560-B, 1980. Ann Arbor, Univ. Microfilms No. 8021835, 120p., 1980.

A series of five experiments were conducted to study the effects of cocaine and morphine on different schedule-induced behaviors in the pigeon and rat. Cocaine produced differential effects on schedule-controlled and schedule-induced behaviors; while morphine effects were more variable. Fixed-ratio (FR) escape responding in pigeons showed cocaine produced increases in FR food schedule responding at the same doses that produced decreases in schedule escape responding. Morphine effects on fixed-interval (FI) escape responding in pigeons were opposite the effects of cocaine on FR escape behavior. In rats, cocaine produced differential effects on schedule-controlled FI responding and two schedule-induced behaviors (running and licking). FI responding was increased at all doses (4, 8, and 10mg/kg) of cocaine, while running and licking were decreased. Morphine produced increases in FI responding with doses of .5 to 2mg/kg and also increased licking responses, while the same doses decreased running responses. When running and licking were induced by a fixed-time schedule in a concurrent situation, both morphine and cocaine increased running responses. Results are discussed with respect to the interaction of the controlling schedule and the type of schedule induced responses influencing the drug effects. An experiment to study drug effects on schedule induced attack responses in pigeons shows that such responses cannot be reliably produced. (Journal abstract modified)

001787 Sloviter, R. S.; Connor, J. D.; Drust, E. G. Dept. of Pharmacology, Milton S. Hershey Medical Center, Pennsylvania State University College of Medicine, Hershey, PA 17033 **Serotonergic properties of beta-phenethylamine in rats.** Neuropharmacology. 19(11):1071-1074, 1980.

Systemic administration of beta-phenethylamine (PEA) caused a behavioral syndrome in male Sprague-Dawley rats consisting of simultaneous forepaw padding, head weaving or tremor, and splayed hindlimbs. This syndrome, which reflects activation of serotonin (5-HT) receptors, was also induced by large doses of amphetamine. Reduction of endogenous 5-HT concentrations by p-chlorophenylalanine or 5,7-dihydroxytryptamine prevented the behavioral syndrome induced by amphetamine, but not that induced by PEA. Methysergide and mianserine blocked the behavioral responses to amphetamine and PEA. Results suggest that PEA acts as a direct 5-HT receptor agonist, whereas amphetamine induces similar effects by releasing endogenous 5-HT. 26 references. (Author abstract modified)

001788 Smialowski, Antoni; Smialowska, Maria; Reichenberg, Krystyna; Byrska, Bozena; Vetulani, Jerzy. Institute of Pharmacology, 31-343 Krakow, Smetna 12, Poland **Motor depression and head twitches induced by IP injection of GABA.** Psychopharmacology. 69(3):295-298, 1980.

The influence of intraperitoneal injection of GABA on locomotor activity and gross behavior of mice, rats, and rabbits was studied. In mice and rats, ip GABA injection produced decreased locomotor activity, but in rats and rabbits, head twitches and disturbances in body balance were seen. GABA-induced head twitches were inhibited by picrotoxin, clonidine, morphine, or cyproheptadine. Results suggest a serotonergic component in GABA-induced head twitches, but it is not the only mechanism involved in this behavior. 21 references. (Author abstract modified)

001789 Smith, Robert C.; Leelavathi, D. E.; Hsu, Louise; Ho, Beng T.; Misra, Chandra H. Section of Behavioral Neurochemistry, Texas Research Institute of Mental Sciences, Houston, TX **Effects of acute vs. chronic phencyclidine on brain biochemistry and behavior.** Psychopharmacology Bulletin. 16(4):66-67, 1980.

The effects of acute and chronic administration of phencyclidine (PCP) on brain biochemistry and behavior were studied to discover whether tolerance or supersensitivity are involved in PCP's effects. In behavioral studies with rats, chronic administration of PCP produced an apparent supersensitivity to higher test doses but decreased responses to lower doses. Acute administration of PCP decreased the activity of several neurotransmitters, second messengers, and enzymes involved in the synthesis or degradation of neurotransmitters in rat brain. Chronic PCP administration, however, induced tolerance or reverse tolerance to some of the biochemical effects of acute PCP.

001790 Sparber, Sheldon B.; Gellert, Vance F.; Fossom, Linda. Dept. of Pharmacology, University of Minnesota, Minneapolis, MN 55455 **On the use of operant behavior to study the neuropsychopharmacology of opiates with special reference to morphine and its relationship to dopamine in the central nervous system.** Advances in Biochemical Psychopharmacology. 20:453-491, 1979.

The use of simple operant behaviors to study the acute pharmacological actions of opiates, as well as the development of opiate tolerance and dependence, is discussed. Data suggest that diminished dopaminergic activity, probably mediated through diminished release of dopamine, is associated with acute and possibly chronic administration of morphine. This is probably not a direct effect of morphine, but a reflection of adaptive changes that might otherwise be associated with withdrawal and tolerance. 104 references.

001791 Stamm, Elizabeth R.; Schlesinger, Kurt. Schlesinger: Dept. of Psychology, University of Colorado, Campus Box 345, Boulder, CO 80309 **Effects of cycloheximide administered in conjunction with nicotine on retention of a passive avoidance task in mice.** Journal of Comparative and Physiological Psychology. 94(6):1184-1190, 1980.

Retention of a passive avoidance task was studied in mice given either cycloheximide or cycloheximide in combination with nicotine. The effects of the drugs were examined in inbred C57B1/6J mice and in genetically heterogenous mice. Cycloheximide had a deleterious effect on retention of the passive avoidance task. Larger doses of cycloheximide were necessary to disrupt memory in heterogenous mice than in C57B1/6J Ss. Nicotine, when administered in conjunction with cycloheximide, abolished the memory-disruptive effects of cycloheximide. The results are discussed in terms of a time dependent consolidation model of memory storage. 36 references. (Author abstract modified)

001792 Steiner, Meir; Katz, Richard J.; Carroll, Bernard J. Shalvata Psychiatric Center, Tel Aviv University Medical School, Hod Hasharon, POB 94, Tel Aviv, Israel **Behavioral effects of dopamine agonists across the estrous cycle in rats.** Psychopharmacology. 71(2):147-151, 1980.

The behavioral effects of apomorphine and bromocriptine were examined at various phases of the estrous cycle in albino rats. Apomorphine induced dose related stereotypy that was not reliably altered by estrous conditions. However, bromocriptine augmented wheel running in an estrous specific fashion. Bromocriptine also increased intracranial self-stimulation, but this was not related to estrous cyclicity. 15 references. (Author abstract modified)

001793 Stilwell, Donald J.; Levitt, Robert A.; Horn, Craig A.; Irvin, Mark D.; Gross, Kevin; Parsons, Dee S.; Scott, Raymond H.; Bradley, Edwin L. Levitt: Dept. of Psychology, University of Alabama, Birmingham, AL 35294 **Naloxone and shuttlebox self-stimulation in the rat.** Pharmacology Biochemistry and Behavior. 13(5):739-742, 1980.

The effects of naloxone on shuttlebox self-stimulation in rats were investigated. Rats self-timed electrical brain stimulation on and off periods in a shuttlebox. Electrodes for self-stimulation were located either in the lateral hypothalamic area (LHA) or the periaqueductal gray (PAG). Doses of the narcotic antagonist naloxone were administered immediately prior to self-stimulation testing. Doses of 1.0, 5.0, and 10.0, or 50.0mg/kg failed to alter shuttlebox self-stimulation behavior. These results are inconsistent with one lever-press self-stimulation study employing PAG electrodes, but agree with other studies using LHA electrodes. 25 references. (Author abstract modified)

001794 Stoff, David M.; Stauderman, Ken; Wyatt, Richard Jed. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Animal activity monitor for chronic drug studies. (Unpublished paper).** Washington, DC, NIMH, 1980. 1 p.

A new computerized technique (which uses capactance sensing fields) has been developed for the longitudinal measurement of motor activity in an animal's usual laboratory environment. At a very high resolution rate and wide range of sensitivities this technique is able to continuously monitor rat behavior during chronic drug infusion. It tracks the path of movement of the animal or sets threshold limits to detect specific behavioral events (for example, rearing, circling, gross movements) in both temporal and spatial dimensions through the use of computer programs for behavioral algorithms. This technique monitors behavior patterns around the clock for weeks or months, and traces the locomotor history of the rat by quantifying the various responses and ultradian and circadian changes in activity. Validation data has been obtained on the cyclicity in behavior patterns of normal and drug-treated rats chronically given amphetamine or haloperidol. The technique has applications to psychopharmacological research as well as to studies of biological rhythms and sleep. (Author abstract modified)

001795 Stutz, Robert M.; Maroli, Allan N.; Tsang, Wah Kwan; Harvan, Paula A. Dept. of Psychology, Mail Location 376, University of Cincinnati, Cincinnati, OH 45221 **Facilitation of self-stimulation in rats by methadone.** Pharmacology Biochemistry and Behavior. 13(6):919-924, 1980.

The effects of either 5mg/kg or 10mg/kg methadone injections (IP) over a 5 day period on medial forebrain bundle/lateral hypothalamic self-stimulation behavior were assessed at 2, 4, 6, 8, 10, and 23 hours postinjection. Compared to saline controls, the 10mg/kg dose produced the typical opiate-induced changes in self-stimulation, i.e., an initial depression which lasted for 2 hours on the first 2 days but was replaced by significant facilitation by hour 4 of day 3. This facilitation persisted for at least 10 hours on all 5 days of the experiment. Except for a transient days 2 and 3 depression of self-stimulation, 5mg/kg was without effect. Results demonstrate that methadone facilitates self-stimulation, but in a dose-dependent manner. 21 references. (Author abstract modified)

001796 Sulcova, A.; Krisiak, M.. Dept. of Pharmacology, University of J. E. Purkynje, Tr. Obrancu miru 10, 662 43 Brno, Czechoslovakia **Effect of piracetam on agonistic behaviour in mice.** Activitas Nervosa Superior. 22(3):200-201, 1980.

The effects of piracetam on agonistic behavior in mice were investigated among 47 pairs of male mice (one singly-housed and one nonaggressive, group-housed mouse). Isolates were allowed 30 minutes adaptation in observational cages before the group-housed partners were introduced; interactions ended after 4 min. Altogether, three interactions repeated, 1 week apart. Isolates were treated with one of two doses of piracetam or water 30 minutes before the interaction. Piracetam significantly reduced agonistic behavior in doses not influencing locomotor activity. These effects resemble those produced by some GABAergic drugs. 6 references.

001797 Suzuki, Tsutomu; Fukumori, Ryuji; Yoshii, Toshio; Yanaura, Saizo; Satoh, Tesuo; Kitagawa, Haruo. Dept. of Pharmacology, Hoshi College of Pharmacy, Shinagawa-ku, Tokyo 142, Japan **Effect of p-chlorophenylalanine on diazepam withdrawal signs in rats.** Psychopharmacology. 71(1):91-93, 1980.

The effect of p-chlorophenylalanine (PCPA), a specific serotonin (5-HT) depleter, on diazepam withdrawal signs was studied. Rats were made dependent on diazepam by the chronic ad-

ministration of this drug in the diet. At the time of diazepam withdrawal, the animals were treated with PCPA or the corresponding vehicle. After diazepam withdrawal, the maximal bodyweight losses of control and PCPA-treated animals were 4.1% and 9.0% respectively. In naive animals, PCPA did not cause any change in bodyweight. These results suggest that depletion of central 5-HT by PCPS may potentiate the severity of diazepam withdrawal signs. 9 references. (Author abstract modified)

001798 Switzman, Lorne Arthur. Concordia University (Canada) **The relationship between positive reinforcement and conditioned taste aversion produced by self-administered drugs. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1486-B, 1980. (Not available from Univ. Microfilms), 1980.

The nature of conditioned taste aversion (CTA) induced by psychoactive drugs was investigated in the rat. In Exp 1, morphine induced an increase in running speed and a CTA, indicating that morphine can be simultaneously reinforcing and aversive. Further, the relationship between the two behavioral effects suggested they were interdependent; and the reduction of the cue value of food in the runway goal box resulted in food aversion and increased variability in running speed. Exp 2 used multiple injections of cocaine within a CTA paradigm; the multiple injection procedure enhanced the CTA normally induced by cocaine. This indicates that the temporal properties of a self-administered drug may be important for the induction of a CTA. In Exp 3, rats were preexposed to valium, morphine, or tetrahydrocannabinol prior to conditioning with one of the drugs. Depending on the preexposure and the conditioning drugs, CTA could still occur suggesting that rats can discriminate between different drug properties. When the preexposure and conditioning drugs were reversed, the CTA could be attenuated, possibly as a result of the additional negative effects produced by the CTA attenuating drug. (Journal abstract modified)

001799 Szekely, J. I.; Miglecz, E.; Ronai, A. Z. Institute for Drug Research, H-1325 Budapest, P.O. Box 82, Hungary **Biphasic effects of a potent enkephalin analogue (D-Met2,Pro5)-enkephalinamide and morphine on locomotor activity in mice.** Psychopharmacology. 71(3):299-301, 1980.

The effects of morphine and the enkephalin analogue (D-Met2,Pro5)-enkephalinamide on spontaneous locomotion were studied in male CFLP mice. In subcutaneous doses of 3 to 10mg/kg, both compounds induced a brief reduction of motor activity followed by a period of behavioral hyperactivity. Results suggest that the motor effects of the two compounds are mediated by similar receptor mechanisms. 13 references. (Author abstract modified)

001800 Tagashira, Eijiro; Izumi, Tomoko; Yanaura, Saizo. Dept. of Pharmacology, Hoshi College of Pharmacy, Tokyo 142, Japan **Experimental dependence on barbiturates: II. Relationship between drug levels in serum and brain and the development of dependence in rats.** Psychopharmacology. 60(2):111-116, 1979.

The relationship between barbiturate levels in serum and brain and the development of dependence in rats was investigated. Feeding rats on food containing phenobarbital (PB) for 13 consecutive days resulted in the inhibition of motor coordination for 7 days, followed by a gradual decrease in the inhibition. PB level in the serum reached a peak on the third day of feeding and then gradually decreased. PB level in the brain, unlike that in the serum, gradually increased up to the seventh day and then decreased until the 13th day of feeding. Thus, alterations of the inhibited motor performance (rotarod task) were more closely associated with PB level in the brain than PB serum level. PB level in serum increased parallel to the graded increment in dosage while that in brain did not increase above the level on the seventh day of feeding. Results suggest that the development of dependence on PB is more closely correlated with length of application of the drug than with the magnitude of its dosage. 16 references. (Author abstract modified)

001801 Takahashi, Reinaldo N.; Singer, George. Singer: Dept. of Psychology, La Trobe University, Bundoora, Australia, 3083 **Effects of body weight levels on cannabis self-injection.** Pharmacology Biochemistry and Behavior. 13(6):877-881, 1980.

The effects of bodyweight levels (caused by food deprivation and the presence of a fixed-interval 1 min (FI1) schedule of food reinforcement on delta9-tetrahydrocannabinol (THC) self-injection behavior were investigated. Results indicate that rats at 80% bodyweight with the FI1 schedule condition self-administered the greatest amount of THC. In a further experiment, naive rats acquired THC self-injection at 80% bodyweight with a FI1 schedule. Rats were then allowed to regain bodyweight to their free feeding level and were tested again in the same paradigm. Animals recovering bodyweight did not maintain the self-injection rates. Data indicate that the environmental conditions necessary in the acquisition phase are also required to maintain intake of THC 12.5mcg/kg/infusion. 22 references. (Author abstract modified)

001802 Tarika, Janet S.; Winger, Gail. Winger: Dept. of Pharmacology, M6322 Medical Science Building I, University of Michigan, Ann Arbor, MI 48109 **The effects of ethanol, phenobarbital, and baclofen on ethanol withdrawal in the rhesus monkey.** Psychopharmacology. 70(2):201-208, 1980.

The effects of ethanol, phenobarbital, and baclofen on ethanol withdrawal were studied in rhesus monkeys. Abrupt cessation of ethanol administration following 16 days of chronic administration was accompanied by moderate to severe tremoring, reaching, vomiting, and one or more convulsions. Once every 3 or 4 days, ethanol was withheld for 16 hr. Withdrawal signs were scored for the first 12 hr of this period, and then a test dose of ethanol, phenobarbital, or baclofen was administered. Withdrawal or intoxication signs were scored over the next 4 hr, at which time ethanol administration was resumed. Both ethanol and phenobarbital suppressed ethanol withdrawal signs in a dose-related manner, and produced dose-related intoxication. Baclofen was largely ineffective in reducing withdrawal-induced tremors, although it was capable of producing sedation of a different type than that produced by phenobarbital and ethanol. 29 references. (Author abstract modified)

001803 Teal, Janice J.; Holtzman, Stephen G. Holtzman: Dept. of Pharmacology, Emory University School of Medicine, Atlanta, GA 30322 **Discriminative stimulus effects of prototype opiate receptor agonists in monkeys.** European Journal of Pharmacology. 68(1):1-10, 1980.

Squirrel monkeys trained to discriminate between intramuscular injections of saline and morphine (3.0mg/kg) or cyclazocine (0.1mg/kg) in a two-choice avoidance paradigm were tested for stimulus generalization to ethylketocyclazocine and N-allylnormetazocine (SKF-10,047). Both drugs completely mimicked the stimulus effects of cyclazocine but not those of morphine. Naltrexone (0.3mg/kg) produced a threefold shift to the right of the cyclazocine dose/response curve, but did not completely block the cyclazocine-like stimulus effects of SFK-10,047 or ethylketocyclazocine. SKF-10,047 was a competitive antagonist at receptors mediating the stimulus effects of morphine. Results are consistent with a multiple opiate receptor model and suggest that the stimulus effects of morphine and cyclazocine are sub-

served by different cellular substrates. 29 references. (Author abstract modified)

001804 Tikal, K.; Pavlovicova, E.; Hvizdosova, J. Pharmacological Dept., Faculty of Hygiene, Srobarova 50, 100 34 Prague 10, Czechoslovakia **Spontaneous motor activity in rats given repeatedly beta-sympathomimetics -- isoprenalin and salbutamol.** Activitas Nervosa Superior. 22(3):230-231, 1980.

The effects of chronic administration of two beta-sympathomimetics, isoprenalin and salbutamol on spontaneous motor activity were investigated in rats. On the first day of treatment, total activity was higher than in the control group, indicating a stimulant effect of the amphetamine type or an anxiolytic effect. In the isoprenalin group, activity was further enhanced on the second and third days. In the salbutamol group, total activity decreased from the first to third days. The period of grooming was prolonged after isoprenalin, and shortened after salbutamol. Thus, isoprenalin affected spontaneous motor activity less in the first days of application, while salbutamol reduced activity and had a more marked and delayed effect. Clinical implications for the treatment of depression are discussed. 4 references.

001805 Tomasikova, Z.; Krsiak, M. Institute of Pharmacology, Czechoslovak Academy of Sciences, Albertov 4, 182 00 Prague 2, Czechoslovakia **Behavioural effects of acetylsalicylic acid, paracetamol, caffeine, guaiphenesin and their combinations.** Activitas Nervosa Superior. 22(3):203-205, 1980.

The behavioral effects of acetylsalicylic acid, paracetamol, caffeine, guaiphenesin, and their combinations were investigated among 167 pairs of male mice (one singly-housed and one non-aggressive, group-housed mouse). Isolates were treated once weekly (for 3 weeks) with some drug combination or saline 60 min before the social interaction. Eleven acts and postures classified into four categories (aggressive, timid, sociable, or locomotor activities) were recorded. Acetylsalicylic acid and paracetamol were without behavioral effects, guaiphenesin produced a shift from aggressive to defensive/escape activities in aggressive animals, and caffeine showed some stimulant effect in timid animals. The behavioral effects of combinations of these drugs were predictable from the actions of the individual components. It is concluded that the abuse potential in man of these combinations is probably quite low. 5 references.

001806 Tombaugh, Tom N.; Ritch, Michael A.; Shepherd, Devan T. Carleton University, Dept. of Psychology, Ottawa, Ontario, Canada K1S 5B6 **Effects of pimozide on accuracy of performance and distribution of correct responding on a simultaneous discrimination task in the rat.** Pharmacology Biochemistry and Behavior. 13(6):859-862, 1980.

After training rats in a simultaneous discrimination problem, pimozide, a dopamine receptor blocker, was administered to determine whether accuracy of performance would be disrupted. Each animal received five doses of pimozide delivered in a Latin Square sequence with five nondrug days between injections. Pimozide did not disrupt well-established discrimination behavior at any of the doses, even though a decrease in rate of responding was observed at the two higher doses. These results provide additional evidence that DA neurons are not essential in the mediation of previously learned associations. 14 references. (Author abstract)

001807 Tyers, M. B. Pharmacology Dept., Glaxo Group Research Ltd., Greenford, Middlesex UB6 0HE, England **A classification of opiate receptors that mediate antinociception in animals.** British Journal of Pharmacology. 69(3):503-512, 1980.

The effects of opioid analgesic drugs were studied using several antinociceptive tests on male ICI mice and male hood rats. In tests that use heat as the nociceptive stimulus, mu-opiate receptor agonists (morphine, pethidine, and dextropropoxyphene) had steep and parallel dose/response curves. Kappa-agonists (ethylketazocine, nalorphine, and pentazocine) were inactive against heat nociception except in doses that caused sedation and motor incapacitation. Mu-agonists and kappa-agonists both produced steep and parallel dose/response curves in the writhing and paw pressure tests. 23 references. (Author abstract modified)

001808 Ushijima, I.; Yamada, K.; Furukawa, T.; Noda, Y.; Todoroki, M.; Inanaga, K. Dept. of Pharmacology, School of Medicine, Fukuoka University, Fukuoka 814, Japan **Biphasic effects of thyrotropin-releasing hormone on exploratory behavior in mice.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):257-263, 1980.

Thyrotropin releasing hormone (TRH, 2.5mg/kg i.p.) induced an increase in ambulation followed by a decrease in male ddY mice. Pretreatment with nialamide (20mg/kg i.p.) potentiated the hyperactivity elicited by TRH but did not alter the subsequent hypoactivity. Tetrabenazine (3mg/kg i.p.) decreased ambulation when given alone or after TRH, but had a biphasic effect when given after nialamide. The biphasic action of TRH on exploratory behavior may involve facilitation of dopamine release, resulting in activation of postsynaptic and presynaptic dopamine receptors. 29 references. (Author abstract modified)

001809 Van der Laan, J. W.; Jacobs, A. W. C. M.; Bruinvels, J. Bruinvels: Dept. of Pharmacology, Erasmus University Rotterdam, P.O. Box 1738, NL-3000 DR Rotterdam, The Netherlands **Effects of branched-chain fatty acids on GABA-degradation and behavior: further evidence for a role of GABA in quasi-morphine abstinence behavior.** Pharmacology Biochemistry and Behavior. 13(6):843-849, 1980.

The effects of branched chain fatty acids (2-methyl, 2-ethylcaproic acid and 2,2-dimethylvaleric acid) on GABA degradation and behavior are described, and further evidence for a role of GABA in quasimorphine abstinence behavior in rats is discussed. It is noted that an increase in GABAergic activity has been implicated in the initiation of quasimorphine abstinence behavior by di-n-propylacetate (DPA). The two branched chain fatty acids (structural analogues of DPA) were used to study this relationship between behavioral and biochemical effects. A correlation appears to exist between the Ki of these compounds for succinic semialdehyde dehydrogenase, the second enzyme in the degradation of GABA, and the doses exerting a maximum effect on behavior. On the other hand, concurrent inhibition of GABA-transaminase seemed to suppress the behavioral effects of the fatty acids. This apparent paradox may be explained by supposing a different action of the fatty acids in distinct compartments of the brain, which suggests an important role for increased GABAergic activity in the neuronal compartment in the initiation of the quasimorphine abstinence behavior. 27 references. (Author abstract modified)

001810 Vandegriff, K. D.; Toy, L. Y.; Cominsky, N. C.; Huggins, S. E. Dept. of Biology, Program in Physiology, University of Houston, Houston, TX 77004 **Influence of monoamine depleting pharmacologic agents on levels of activity in Caiman sclerops.** Comparative Biochemistry & Physiology. 64C:191-198, 1979.

The influence of the monoamine depleters reserpine, parachlorophenylalanine (PCPA), and of 6-hydroxydopamine (6-OHDA) with desmethylimipramine (DMI) on levels of activity in Caiman sclerops was studied. Caimans treated with a single dose of PCPA showed significantly increased activity and some behavioral modification over the first 3 days and significant decreases in activity over the next 4 days, returning to con-

trol rates by day 7. Caimans pretreated with DMI and then given a single dose of 6-OHDA showed significant reduction in activity and behavioral modification over the entire 14-day study period and beyond. Caimans treated with a single dose reserpine showed gradual reduction in activity over the first 3 posttreatment days and little change thereafter. A single dose of amphetamine showed a little reduction in activity, and a single dose of melatonin showed no significant reduction in activity but some behavioral changes, possibly attributable to reduced sensory activity. 37 references. (Author abstract modified)

001811 Vawter, Marquis P.; Green, Kenneth F. Green: Psychology Dept., California State University, Long Beach, CA 90840 **Effects of desglycinamide-lysine vasopressin on a conditioned taste aversion in rats.** Physiology & Behavior. 25(6):851-854, 1980.

The effects of desglycinamide-lysine vasopressin on a conditioned taste aversion (CTA) were investigated. Eight groups of rats were defined by factorial combination of pretreatment during neophobia and conditioning (vasopressin vs. saline), UCS during conditioning (pairing saccharin -flavored water with injections of lithium chloride or saline), and pretreatment during extinction (vasopressin vs. saline). Rats given three saccharin/lithium pairings developed strong aversion. Of the rats with CTAs, those given vasopressin during conditioning, extinction, or both showed increased resistance to extinction on the last four of eight extinction days. Vasopressin had no other effect on drinking of saccharin. Vasopressin thus appears to enhance resistance to extinction of avoidance responses in both external and internal milieus. 25 references. (Author abstract modified)

001812 Vinogradov, V. M.; Medvedev, V. I.; Grechko, A. T.; Bakharev, V. D.; Ponomareva-Stepnaya, M. A. Kafedra fiziologii Boyenno-meditsinskoy akademii im. S. M. Kirova, Leningrad, USSR **/The effect of neuropeptide fragments of adrenocorticotropin and vasopressin on behavioral activity in rats./** Vliyaniye na povedencheskuyu aktivnost' krys neyropeptidov-fragmentov adrenokortikotropnogo gormona i vazopressina. Fiziologicheskiy Zhurnal SSSR imeni I. M. Sechenova. 66(3):409-415, 1980.

The effects of vasopressin and those of fragments of adrenocorticotropin ACTH5-10, ACTH4-7 l-phenylalanine, and ACTH4-7 d-phenylalanine on the learning of rats in a U-shaped labyrinth were studied. The consolidation of skills in long-term memory ability for reversal were checked. In the experiment rats were faced with choices between certain parts of the floor where electric shocks were administered and other parts of the floor where no such shocks were administered, and also between dark and bright areas. The results suggest that the effect of all these oligopeptides on the higher nervous activity is significant and specific, vasopressin improving the long-term memory, ACTH4-7 l-phenylalanine improving learning, ACTH4-7 d-phenylalanine making learning next to impossible. 9 references. (Journal abstract modified)

001813 Vogel, R. A.; Frye, G. D.; Wilson, J. H.; Kuhn, C. M.; Koepke, K. M.; Mailman, R. B.; Mueller, R. A.; Breese, G. R. Breese: Dept. of Psychiatry, University of North Carolina School of Medicine, Chapel Hill, NC 27514 **Attenuation of the effects of punishment by ethanol: comparisons with chlordiazepoxide.** Psychopharmacology. 71(2):123-129, 1980.

The suppressive effect of punishment on licking behavior in water-deprived male Sprague-Dawley rats and female CD-1 mice was attenuated by ethanol (ETOH), chlordiazepoxide (CDZ), or tert-butanol. Punished drinking was suppressed by ETOH in doses that did not alter unpunished drinking. Doses of ETOH and CDZ that significantly increased punished responding increased jump thresholds to aversive shock. CDZ decreased serum corticosterone concentrations, but ETOH did not. ETOH impaired aerial righting reflex and reduced rectal temperature, but CDZ had no effect on these parameters. Specific binding of (3H)flunitrazepam to crude brain cortical membranes was decreased by CDZ, but not by ETOH. Results indicate that even though the behavioral effects of ETOH resemble those of CDZ, ETOH does not interact directly with a benzodiazepine binding site. 41 references. (Author abstract modified)

001814 Voith, Katherine. Dept. of Pharmacology, Ayerst Research Laboratories, Montreal, Quebec H3C 3J1, Canada **Supersensitivity to apomorphine in experimentally induced hypokinesia and drug-induced modifications of the apomorphine response.** Psychopharmacology. 70(3):247-254, 1980.

The development and degree of supersensitivity to the locomotor stimulant effect of apomorphine were studied in rats which had been rendered hypokinetic by bilateral injections of 6-hydroxydopamine (6-OHDA) into the anterolateral hypothalamus. Up to 2 days after surgery, the effect of apomorphine was comparable in lesioned and normal rats, indicating that dopaminergic supersensitivity did not develop over this short period. As the duration between the 6-OHDA injections and time of testing with apomorphine increased, the animals became progressively more sensitive to the stimulant effects of apomorphine. Results of studies of the effects of various pharmacologic agents on the apomorphine response suggest that the apomorphine-induced ambulation in hypokinetic rats is primarily mediated through dopaminergic mechanisms but both serotonergic and cholinergic mechanisms exert modulating influences. 38 references. (Author abstract modified)

001815 Voronina, T. A.; von Littrov, K. Lab. farmakologii nervnoy sistemy Instituta farmakologii AMN SSSR, Moscow, USSR **/Comparison of clonazepam and diazepam in experimental studies./** Sravnitel'naya kharakteristika klonazepama i diazepama v eksperimente. Farmakologiya i Toksikologiya. 43(3):296-299, 1980.

Clonazepam and diazepam were studied comparatively using white mice and rats. Among the drugs of the benzodiazepine series, clonazepam showed the highest anticonvulsant activity. It had the highest activity and selectivity of action according to the subcutaneous antipentylene, tetrazol and antithiosemicarbazid tests. Results show that the administration of increased doses of clonazepam result in potentiation of its tranquilizing, antiaggressive and sedative effects. The tranquilizing effect exhibited by clonazepam in the conflict situation is similar to that elicited by diazepam. The sedative effect of clonazepam on Muller's labyrinth is more potent compared to diazepam. Unlike diazepam metabolites that show high activity in experiments, the products of clonazepam biotransformation are less potent. 12 references. (Journal abstract modified)

001816 Waddington, John L.; Cross, Alan J. Division of Psychiatry, MRC Clinical Research Center, Watford Road, Harrow, Middlesex, HA1 3UJ, England **The striatonigral GABA pathway: functional and neurochemical characteristics in rats with unilateral striatal kainic acid lesions.** European Journal of Pharmacology. 67(1):27-32, 1980.

In male Sprague-Dawley rats with unilateral striatal kainic acid (KA) lesions, striatal glutamic acid decarboxylase (GAD) and nigral GABA concentrations were reduced. The animals showed ipsilateral rotation after subcutaneous apomorphine and contralateral rotation after intranigral muscimol. Rotational responses to apomorphine were highly correlated with nigral GABA depletion and provided a sensitive index of the functional integrity of striatonigral GABA neurons. Rotational responses

to muscimol were also correlated with nigral GABA depletion, but striatal GAD was not correlated with rotation or nigral GABA levels. 34 references. (Author abstract modified)

001817 Waddington, John L.; Gamble, Stephen J. Div. of Psychiatry, M.R.C. Clinical Research Centre, Watford Road, Harrow, Middlesex HA1 3UJ, England **Emergence of apomorphine-induced months continuous treatment with fluphenazine decanoate.** European Journal of Pharmacology. 68(3):387-388, 1980.

Stereotypic behavioral responses to 0.15mg/kg apomorphine were enduringly antagonized during 6 months of treatment with fluphenazine decanoate. However, apomorphine elicited vacuous chewing in 70% of animals treated with the depot neuroleptic for 6 months, compared to 12.5% of placebo treated animals. Results suggest that stereotypy and vacuous chewing have distinct substrates which are differentially influenced by prolonged neuroleptic treatment. 5 references.

001818 Wellman, Paul J.; Peters, Ronald H. Dept. of Psychology, Texas A&M University, College Station, TX 77843 **Effects of amphetamine and phenylpropanolamine on food intake in rats with ventromedial hypothalamic or dorsolateral tegmental damage.** Physiology & Behavior. 25(6):819-827, 1980.

The effects of amphetamine and phenylpropanolamine, an analogue of amphetamine, on food intake in rats with ventromedial hypothalamic (VMH) or dorsolateral tegmental (DLT) damage were investigated. Female rats with sham lesions or lesions of the VMH or DLT were maintained at 80% bodyweight to minimize possible group differences in hunger motivation. VMH rats displayed attenuated amphetamine anorexia when fed a high fat test diet but normal anorexia when fed a pellet test diet whereas DLT rats displayed attenuated amphetamine anorexia when fed either test diet. Neither VMH nor DLT rats displayed attenuated anorexia to phenylpropanolamine. Results are discussed in terms of an amphetamine activated arousal mechanism within the DLT. 54 references. (Author abstract modified)

001819 Wetzel, W.; Popov, N.; Lossner, B.; Schulzeck, S.; Honza, R.; Matthies, H. Institute of Pharmacology and Toxicology, Leipzigerstrasse 44, DDR-301 Magdeburg, German Democratic Republic **Effect of L-fucose on brain protein metabolism and retention of a learned behavior in rats.** Pharmacology Biochemistry and Behavior. 13(6):765-771, 1980.

The intraperitoneal or intraventricular application of L-fucose prior to training in shuttlebox avoidance as well as in shock motivated brightness discrimination in rats significantly improved the retention of learned behavior 24 hr later. The application of D-fucose was without influence on retention. In naive animals, intraventricularly applied L-fucose caused an increase in the rate of protein synthesis in the hippocampus, resulting in a significant increase in total proteins of this brain structure, mainly attributed to the Tris-insoluble protein fractions. The results are discussed in terms of an activation of glycoprotein formation by increasing supply with L-fucose. 40 references. (Author abstract)

001820 Wheeler, S. C.; Roth, R. H. Roth: Dept. of Pharmacology, Yale University School of Medicine, New Haven, CT 06510 **Tolerance to fluphenazine and supersensitivity to apomorphine in central dopaminergic systems after chronic fluphenazine decanoate treatment.** Naunyn-Schmiedeberg's Archives of Pharmacology. 312(2):151-159, 1980.

Fluphenazine decanoate was administered chronically to rats on a schedule for which marked tolerance developed to acute fluphenazine effects on several parameters of dopaminergic neuronal function. Dihydroxyphenylalanine (DOPAC) and homovanillic acid (HVA) levels, indicators of dopaminergic activity, were quantitated in terminal areas of the mesocortical, mesolimbic, and nigrostriatal systems. Evidence was obtained that tolerance was functional rather than metabolic and was characterized by a large reduction in the accumulation of metabolites which normally follows a challenge dose of fluphenazine. Other experiments suggest that results are not due to the effects of chronic fluphenazine on the noradrenergic innervation of the cortex and are not explained by altered catabolism or clearance of the dopamine metabolites. During withdrawal from chronic fluphenazine decanoate treatment, supersensitivity to apomorphine developed in the striatum. 49 references. (Author abstract modified)

001821 White, Susan R.; Bieger, Detlef. Memorial University of Newfoundland, St. John's, Newfoundland, Canada, A1B 3V6 **Central serotonin receptor sensitivity in rats with experimental allergic encephalomyelitis.** Research Communications in Chemical Pathology and Pharmacology. 30(2):269-281, 1980.

Serotonin mediated bulbospinal motor activities were examined in male Wistar rats with paraplegia induced by experimental allergic encephalomyelitis (EAE). Results showed that the impaired serotonergic transmission induced by EAE is associated with motor deficits manifested during the acute paralytic stage of the disease. Serotonergic transmission was blocked at caudal spinal levels but remained functional at supraspinal and rostral spinal levels. 20 references. (Author abstract modified)

001822 Wilcox, Richard E.; Riffee, William H.; Chen, Pih-Chun; Hammett, Sam, III; Smith, Robert V. Riffee: Dept. of Pharmacology and Drug Dynamics Institute, College of Pharmacy, University of Texas, Austin, TX 78712 **Behavioral facilitation following chronic administration of N-n-propylnorapomorphine.** Psychopharmacology. 72(1):113-115, 1980.

Using stereotypic cage climbing behavior in mice, chronic administration of apomorphine and N-n-propylnorapomorphine (two direct acting dopamine agonists) and d-amphetamine (an indirect dopamine agonist) were found to produce enhanced behavioral response to a test dose of apomorphine 4, 8, and 12 days after cessation of chronic drug injections. It is suggested that this behavioral supersensitivity (due to increased postsynaptic receptor sensitivity) is presynaptic in origin (whether through direct action of the drug or indirect feedback) and that the effect appears to be relatively long-lasting and not dependent upon the drug being present in the tissue. 13 references. (Author abstract modified)

001823 Wishart, Thomas B.; Zacharko, Robert M. Dept. of Psychology, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0, Canada **The effects of para-chloroamphetamine on fenfluramine anorexia in ad libitum and stimulation-induced feeding in the rat.** Communications in Psychopharmacology. 3(5):335-339, 1979.

Fenfluramine produced anorexia in male rats fed ad libitum, but this effect was reduced by pretreatment with the serotonin depletor para-chloroamphetamine (PCA). PCA did not block the depressant effect of fenfluramine in stimulus bound feeding tests. Baseline feeding and bodyweights increased after fenfluramine but not after PCA. 9 references. (Author abstract modified)

001824 Wong, Chak-Lam; Wai, Man-Keung; Roberts, Michael B. Dept. of Pharmacology, Faculty of Medicine, University of Hong Kong, 5 Sassoon Road, Hong Kong **The effect of aspirin and paracetamol on the increased naloxone potency induced by**

morphine pretreatment. European Journal of Pharmacology. 67(2/3):241-246, 1980.

Pretreatment with a single dose of morphine did not alter the subsequent antinociceptive action of morphine in the abdominal constriction test in female WHT/Ht mice, but did cause a marked increase in the antagonistic effect of naloxone. Pretreatment with paracetamol or aspirin caused a small but significant antagonism of the antinociceptive effect of morphine, but did not alter the antagonistic action of naloxone. When morphine was given together with aspirin or paracetamol, the ability of morphine to induce an increase in naloxone potency was attenuated. Results suggest that the morphine-induced increase in naloxone potency may be mediated through prostaglandin synthesis, whereas the antinociceptive effect of morophine is independent of prostaglandin. 14 references. (Author abstract modified)

001825 Woolverton, William L.; Balster, Robert L. Dept. of Pharmacology, Medical College of Virginia, Virginia Commonwealth University, Richmond, VA 23298 **The effects of lithium on choice between cocaine and food in the rhesus monkey.** Communications in Psychopharmacology. 3(5):309-318, 1979.

The effects of lithium were studied in three rhesus monkeys trained in a preference procedure to choose between i.v. infusions of cocaine or food reinforcement. Continuous i.v. infusion of lithium chloride for 28 days caused only transient shifts away from the preference for cocaine (300mcg/kg). Results do not support the hypothesis that lithium blocks the reinforcing effects of cocaine. 23 references. (Author abstract modified)

001826 Worms, P.; Lloyd, K. G. Lloyd: Dept. of Biology, Neuropharmacology Unit, LERS, Synthelabo, 31, av. P. V. Couturier, F-92220 Bagneux, France **Biphasic effects of direct, but not indirect, GABA mimetics and antagonists on haloperidol-induced catalepsy.** Naunyn-Schmiedeberg's Archives of Pharmacology. 311(2):179-184, 1980.

Catalepsy induced by haloperidol in male Sprague-Dawley rats was diminished by i.p. injection of very low doses of the direct GABA agonists SL-76002 and muscimol, but was potentiated by larger doses. Indirect GABA mimetico, which increased GABA levels through enzyme inhibition, produced only a monophasic effect (potentiation) on neuroleptic-induced catalepsy. Bicuculline blocked the potentiation of catalepsy by GABA mimetic drugs. Results indicate that dopaminergic neuronal function is influenced by more than one group of GABA receptors. 53 references. (Author abstract modified)

001827 Yehuda, Shlomo; Kastin, Abba J.; Coy, David H. Kastin: V.A. Medical Center, 1601 Perdido St., New Orleans, LA 70146 **Thermoregulatory and locomotor effects of DSIP: paradoxical interaction with d-amphetamine.** Pharmacology Biochemistry and Behavior. 13(6):895-900, 1980.

The thermoregulatory and locomotor effects of delta-sleep-inducing peptide (DSIP) and its paradoxical interaction with d-amphetamine were investigated in rats. A low dose (0.1mg/kg) of peripherally-administered DSIP caused hypothermia in rats maintained at 4 degrees C but larger doses (1.0 or 3.0mg/kg) did not. At 22 degrees C, all three doses of DSIP caused hyperthermia. The interaction of d-amphetamine with DSIP was dependent on ambient temperature; and 4 degrees C DSIP had no effect on d-amphetamine-induced hypothermia, but at 22 degrees C, DSIP reversed the usual d-amphetamine-induced effect of hyperthermia to hypothermia. Many rats receiving DSIP and d-amphetamine at 22 degrees C paradoxically exhibited what appeared to be sleep. Results suggest that the effects of peripherally-injected DSIP on body temperature are independent from its effects on locomotion and that both effects are dependent upon ambient temperature. 19 references. (Author abstract modified)

001828 Young, Alice M.; Woods, James H. Dept. of Pharmacology, University of Michigan, Ann Arbor, MI 48109 **Behavior maintained by intravenous injection of codeine, cocaine, and etorphine in the rhesus macaque and the pigtail macaque.** Psychopharmacology. 70(3):263-271, 1980.

Lever-pressing behavior of two species of macaque, rhesus macaque and pigtail macaque, was maintained by i.v. injection of codeine, etorphine, or cocaine. Drug-maintained behavior was studied under two access conditions. Under the first condition, selected doses of codeine and cocaine were available for 10 consecutive sessions. Under the second condition, responding was maintained by codeine or cocaine, and saline and selected doses of codeine, etorphine, and cocaine were substituted during single experimental sessions. Performance varied with drug and injection dose, access condition, and macaque species. 22 references. (Author abstract modified)

001829 Zebrowska-Lupina, Iwona. Dept. of Pharmacology, Institute of Clinical Pathology Medical Academy, 20-090 Lublin, Poland **Presynaptic alpha-adrenoceptors and the action of tricyclic antidepressant drugs in behavioural despair in rats.** Psychopharmacology. 71(2):169-172, 1980.

The effect of low doses of two alpha-adrenolytics, yohimbine and phentolamine, on the action of tricyclic antidepressants in the behavioral despair test in male Wistar rats was studied. Immobility was reduced by nortriptyline, imipramine, or amitriptyline, given in a single dose or for 2 weeks. Yohimbine potentiated the effect of a single dose of nortriptyline or amitriptyline and of repeated doses of imipramine and amitriptyline for 2 weeks. Phentolamine potentiated only the effect of a single dose of nortriptyline. When coadministered with antidepressants for 3 weeks, yohimbine counteracted the effect of imipramine and nortriptyline. Clonidine abolished the reduction of immobility induced by a single antidepressant dose. Results indicate that the blockade of presynaptic alpha-adrenoceptors facilitates the action of tricyclic antidepressants in the behavioral despair test. 26 references. (Author abstract modified)

05 TOXICOLOGY AND SIDE EFFECTS

001830 Abel, Ernest L.; Dintcheff, Barbara A.; Day, Nancy. Research Institute on Alcoholism, 1021 Main St., Buffalo, NY 14203 **Effects of marihuana on pregnant rats and their offspring.** Psychopharmacology. 71(1):71-74, 1980.

The effects of marihuana on pregnant rats and their offspring were investigated. Pregnant rats were intubated with marihuana extract from gestation day 3 to parturition. Control animals were pair-fed. At parturition pups were culled and assigned to nondrug treated dams. A positive control group consisting of animals prenatally exposed to alcohol was included for comparison of birth weight data. Marihuana reduced food and water consumption and maternal weight gain. Pup weight at birth was reduced by about 10% relative to pair-fed controls in animals exposed to high doses of marihuana, and by approximately 15% in pups exposed to alcohol relative to their pair-fed controls. Litter size and pup mortality at birth were not affected significantly. Postnatal mortality was increased and neonatal weight was decreased at 21 days in marihuana-treated offspring. At 11 weeks of age bodyweights of drug-treated females but not males, were still significantly less than that of pair fed controls. 16 references. (Author abstract modified)

001831 Ali, S. Fatehyab; Hasan, Mahdi; Hasan, M. Z.; Anwar, J. Brain Research Center, Jawaharlal Nehru Medical College, Aligarh Muslim University, Aligarh-202001, India **Effect of nickel on the levels of dopamine, noradrenaline and serotonin in different regions of the rat brain.** Acta Pharmacologica et Toxicologica. 47(4):318-320, 1980.

Monoamine levels were determined in the basal ganglia and cerebral cortex of male hooded rats treated with elemental nickel (2mg/kg i.p.) daily for 7 days. Nickel administration caused significant deposition of the element in the cerebral cortex and basal ganglia. Dopamine and serotonin were reduced in the cerebral cortex and basal ganglia, while noradrenaline was reduced only in the basal ganglia. The animals showed initial irritability and restlessness, followed by lethargy and diminished motor activity. 13 references.

001832 Back, D. J.; Breckenridge, A. M.; Crawford, Francesca E.; Orme, M. L'E.; Rowe, P. H. Dept. of Pharmacology & Therapeutics, University of Liverpool, P.O. Box 147, Liverpool L69 3BX, England **Phenobarbitone interaction with oral contraceptive steroids in the rabbit and rat.** British Journal of Pharmacology. 69(3):441-452, 1980.

The effect of phenobarbitone on the single dose pharmacokinetics of the synthetic steroids ethinylestradiol and norethisterone was studied in female New Zealand White rabbits and Wistar rats. Results revealed a complex interaction between phenobarbitone and the contraceptive steroid components. Phenobarbitone pretreatment did not affect plasma levels of hormones injected intravenously, but decreased the availability of hormones administered orally. The effect of enzyme induction on the first pass effect varied with the rate of hormone delivery to the liver. The effect of phenobarbitone on plasma steroid concentrations should be considered in women taking the antiepileptic and contraceptive preparation concurrently. 22 references. (Author abstract modified)

001833 Ben-Barak, Yaacov; Gazit, Herbert; Dudai, Yadin. Dudai: Dept. of Neurobiology, Weizmann Institute of Science, Rehovot, Israel **Fornix lesion prevents an organophosphate-induced decrease in muscarinic receptor level in rat hippocampus.** Brain Research. 194(1):240-243, 1980.

The effects of chronic organophosphate (Tetram) administration on the specific binding of the muscarinic antagonist 3H-quinuclidinyl benzilate (3H-QNB) was studied in intact male Wistar rats and in rats with unilateral or bilateral lesions of the fornix. Results showed that the fornix lesion prevented the Tetram-induced decrease in 3H-QNB binding in the hippocampal formation, but not in the cortex. Acetylcholinesterase (AChE) activity was lower in the hippocampus of lesioned animals treated with Tetram than in treated control animals, but cortical AChE activity did not differ between groups. Results indicate that presynaptic terminals are required for the organophosphate to exert its effect on muscarinic receptor level and suggest that the decreased level of muscarinic binding sites induced by organophosphates is due to down regulation of muscarinic receptors by the excess of nonhydrolyzed acetylcholine. 20 references.

001834 Borison, Richard L.; Diamond, Bruce I. Illinois State Psychiatric Institute, Chicago, IL 60612 **Anticholinergics promote neuroleptic-induced tardive dyskinesia.** Advances in Biochemical Psychopharmacology. 24:359-361, 1980.

Animal data are presented in support of the claim that early use of an anticholinergic drug promotes neuroleptic-induced dopamine receptor hypersensitivity. Results show that 3-week treatment of animals with haloperidol results in a behavioral sensitization in response to drugs which directly (e.g., apomorphine) or indirectly (e.g., d-amphetamine) activate dopamine receptors. In contrast, pretreatment with benzatropine or amantadine, a dopamine reuptake blocker, alone produces either a lesser effect or no effect at all. Given the efficacy of amantadine in relieving neuroleptic-induced parkinsonism, this drug would be a more rational and safer long-term choice for the treatment of extrapyramidal side-effects. 12 references.

001835 Burns, Richard J. U.S. Fish and Wildlife Service, Denver Wildlife Research Center, Denver, CO 80225 **Effect of lithium chloride in coyote pup diet.** Behavioral and Neural Biology. 30(3):350-356, 1980.

Four experiments were conducted aimed at detecting the possible influence of lithium chloride (LiCl) on coyote pup growth and development when LiCl was fed to the parent coyote in jackrabbit flesh. In Exp 1, milk samples from two lactating coyotes fed LiCl showed a maximum of 12.04 ppm LiCl. In Exp 2, hand raised coyote pups required a concentration of 262ppm Li, or more, in bottle-fed milk to influence their feeding and weight. In Exp 3, nursing coyote pups showed no lasting effects on weight or nursing behavior when their parents were fed LiCl in jackrabbit flesh. In Exp 4, 40-day-old pups showed no lasting effects on bodyweight or food soliciting behavior after feeding on LiCl-treated jackrabbit flesh provided by their parents in the form of regurgitate. The pups showed no avoidance of jackrabbit flesh or preference for an alternate food 7 months later. The results indicate no lasting influence on coyote pup growth or feeding behavior when the pups were fed LiCl-contaminated food or milk provided by their parents. 11 references. (Author abstract modified)

001836 Burstein, Y.; Grady, R. W.; Kreek, M. J.; Rausen, A. R.; Peterson, C. M. Rockefeller University, New York, NY 10021 **Thrombocytosis in the offspring of female mice receiving DL-methadone.** Proceedings of the Society for Experimental Biology and Medicine. 164(3):275-279, 1980.

Thrombocytosis in the offspring of female mice receiving DL-methadone is reported. Subcutaneous methadone administration to female mice beginning 2 weeks prior to conception and continuing through weaning resulted in a significant increase in the number of circulating platelets, an increase in marrow megakaryocytes per high power field and an increase in the percentage of young megakaryocytes in the offspring but not in the mothers. The effect was maximal 14 days after birth and diminished by 28 days. Injection of 5mg/kg/day resulted in similar findings but the changes persisted for 35 days. These findings are consistent with those noted in the infants of human polydrug abusers and suggest that methadone plays a role in similar abnormalities in humans. 27 references. (Author abstract modified)

001837 Creese, Ian; Snyder, Solomon H. Dept. of Neurosciences, University of California, San Diego, School of Medicine, La Jolla, CA 92093 **Chronic neuroleptic treatment and dopamine receptor regulation.** Advances in Biochemical Psychopharmacology. 24:89-94, 1980.

Studies of chronic neuroleptic treatment and dopamine receptor regulation are discussed in relation to the etiology of tardive dyskinesia. Clinical evidence indicates that the symptoms of tardive dyskinesia reflect supersensitivity of DA receptors following their chronic blockade by neuroleptics. Direct binding studies in rodents indicate that denervation of DA neuronal projections to the corpus striatum or chronic neuroleptic treatment augments the number of striatal DA receptors, an increase that may be responsible for the motor behavioral supersensitivity of such animals. Results are discussed in relation to DA receptor changes evident in postmortem schizophrenic brain. 16 references.

001838 Cremer, Jill E.; Cunningham, Vincent J.; Ray, David E.; Sarna, Gurcharan S. MRC Toxicology Unit, Medical Research Council Laboratories, Woodmansterne Road, Carshalton, Surrey SM5 4EF, England **Regional changes in brain glucose uti-**

lization in rats given a pyrethroid insecticide. Brain Research. 194(1):278-282, 1980.

The effects of decamethrin, a synthetic pyrethroid insecticide, on regional brain glucose utilization, and GABA and glutamate levels were determined in male Porton rats. Autoradiographic (14C)2-deoxyglucose studies showed that decamethrin significantly increased the rate of glucose utilization only in the cerebellum, colliculi, and hypothalamus. GABA concentrations tended to increase throughout the brain. Glutamate was slightly decreased in cortical tissue. Decamethrin did not appear to act directly on GABA containing neuronal pathways. 19 references.

001839 Engel, Jorgen; Liljequist, Sture; Goldstein, Menek. Dept. of Pharmacology, University of Goteborg, Fack, S-400 33 Goteborg, Sweden **Dyskinesia induced by long-term treatment with antipsychotic drugs: involvement of pre- and postsynaptic dopaminergic mechanisms.** Advances in Biochemical Psychopharmacology. 23:387-395, 1980.

The locomotor activity of female NMRI mice was studied after discontinuation of chronic treatment with the dopamine receptor blocker penfluridol. Locomotor activity increased markedly on the fifth day of withdrawal and remained elevated for 2 weeks. The rate of tyrosine hydroxylation was increased in the striatum but not in the dopamine-rich limbic area. The hyperkinetic syndrome could be prevented by pretreatment with the tyrosine hydroxylase inhibitor alpha-methyltyrosine. The effects of apomorphine and bromocriptine in these animals suggested that presynaptic and postsynaptic dopaminergic mechanisms were involved in the pathogenesis of the hyperkinetic syndrome induced by long-term dopamine receptor blockade. 20 references.

001840 Evans, Michael A. Dept. of Pharmacology, University of Illinois/Medical Center, Chicago, IL 60680 **Effects of anticonvulsants and methotrexate on calcium disposition.** Naunyn-Schmiedeberg's Archives of Pharmacology. 315(1):63-67, 1980.

Administration of phenytoin for 5 days significantly reduced the oral absorption and bone uptake of radiolabeled calcium in male Swiss mice. Calcium disposition was not altered by acute treatment with phenytoin or by pretreatment with phenobarbital for 1 to 5 days. Pretreatment with methotrexate for 5 days increased the bone uptake of radiolabeled calcium, presumably by decreasing calcium renal clearance. It is concluded that the phenytoin-induced reduction in calcium metabolism is not related to a state of functional folate deficiency. 24 references. (Author abstract modified)

001841 Fennessy, Max R.; Laska, Frank J. Dept. of Pharmacology, University of Melbourne, Parkville, Victoria 3052, Australia **Comparison of opiate agonists and their N-allyl derivatives in the production of physical dependence in the rat.** Psychopharmacology. 64(3):277-283, 1979.

The development of physical dependence to slow release (SR) emulsions of various opiate agonists and their N-allyl derivates was examined. Rats were injected s.c. with SR preparations of morphine, nalorphine, oxymorphone, naloxone, levorphanol, levallorphan, or dextrorphan, and behavior was assessed for 24 hours. Only morphine, oxymorphone, and levorphanol induced signs typical of opiate intoxication lasting 12 hours or more. After 24 hours, the rats were challenged with injections of naloxone and withdrawal behavior and changes in body temperature and body weight were estimated. Withdrawal symptoms were exhibited to varying degrees by all rats except those which had received naloxone SR. It is concluded that opiate agonists induce a greater degree of physical dependence than their N-allyl derivatives. In addition, since dextrorphan is as effective as the agonists in producing several of these effects, it appears that changes in body temperature and body weight and alteration of the metabolism of brain 5-hydroxytryptamine may not be causally related to the dependence process induced by opiates. Such modifications may be associated with the structure of the opiate molecule. 24 references. (Author abstract modified)

001842 Gallager, Dorothy W.; Mallorga, Pierre. Section on Biochemistry and Pharmacology, Biological Psychiatry Branch, NIMH, Clinical Center, 2N315, Bethesda, MD 20205 **Perinatal effects of psychotropic drugs: the anticonvulsant drug diphenylhydantoin. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 14 p.

Data are presented to show that prenatal exposure to the anticonvulsant drug diphenylhydantoin (DPH) results in alterations in (3H)diazepam binding in developing rats which are opposite to (3H)diazepam binding alterations observed in age-matched rats receiving DPH postnatally. The effects of DPH treatment on benzodiazepine binding in developing rats can be correlated to the progression of the convulsant/anticonvulsant effects of DPH during ontogenesis. The in utero exposure to DPH causes significant alterations in benzodiazepine binding, and it can be correlated with an increase in seizure susceptibility. In addition to potential teratogenic effects of DPH, the data indicate a biochemical alteration. This alteration occurs at doses below those causing overt morphological changes and may be a marker for increased seizure susceptibility following prenatal exposure to DPH. These data may be important in the clinical use of this anticonvulsant drug during pregnancy. 30 references.

001843 Hughes, I. E.; Radwan, Salwa. Dept. of Pharmacology, Medical and Dental Building, University of Leeds, Leeds, LS2 9JT, Yorkshire, England **Cardiotoxicity of antidepressants.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 837-842).

Evidence is presented that slow intravenous infusion of amitriptyline (AMI), imipramine (IMI), maprotiline (MAP), or mianserin (MIA) over 2 to 5 hours into conscious rabbits produces death, which is preceeded by convulsions and changes in cardiovascular performance. Only one of six rabbits developed dysrhythmias with MIA, and all drugs lengthened the PR interval and widened the QRS complex. Cardiovascular parameters were greatly modified by convulsions which therefore complicated the assessment of cardiovascular toxicity. In barbiturate anesthetized rabbits, no convulsive episodes developed and heartrate and blood pressure were reduced by all four drugs. Lengthening of the PR interval and widening of the QRS complex were noted, and these effects were greatest with AMI and least with MIA. Dysrhythmias were seen with all drugs but were least frequent with MIA. In these models, the relative cardiovascular toxicity of these antidepressants is : AMI is greater than IMI, IMI is greater than MAP, and MAP is very much greather than MIA. 4 references. (Author abstract modified)

001844 Kirchmayer, Stanislaw; Cichocki, Tadeusz; Bogdal, Jozef; Mach, Tomasz; Pawlicki, Roman; Stachura, Jerzy; Szczudrawa, Jerzy; Tarnawski, Andrzej. Sniadeckich 33, 01-531 Krakow, Poland **Experimental studies on hepatotoxicity of disulfiram.** Materia Medica Polona. 11(1):40-46, 1979.

An attempt was made to determine whether disulfiram is hepatotoxic with rats. There were four groups of 20 rats, the first of which served as controls. Group 2 received 3.2g/kg ethanol per 24 hr for 3 consecutive days; group 3 received 0.6g/kg disulfiram per 24 hr for 3 consecutive days; and group 4 was given both ethanol and disulfiram in the above doses. In groups 3 and 4, AP activity in serum, blood, and liver tissue was significantly increased. Histochemical reactions for acid phosphatase and beta-glucuronidase showed dispersion of these enzymes in the cytoplasm, displacement of lysosomes from the periductal to the

perinuclear region, and presence of cytosegrosomes. Ultrastructure of hepatocytes showed undulation and vacuolization of the smooth endoplasmic reticulum, and mitochondria showed destruction and displacement of the cristae. It is concluded that the hepatotoxic effect of disulfiram can contribute to exacerbation of preexisting degenerative lesions of the hepatic parenchyma. 12 references. (Author abstract modified)

001845 Klawans, Harold L.; Carvey, Paul; Hitri, Ana; Nausieda, Paul A.; Weiner, William J. Dept. of Neurological Sciences and Pharmacology, Rush University, Chicago, IL 60612 **Correlation between daily dosage of chlorpromazine and subsequent supersensitivity.** Advances in Biochemical Psychopharmacology. 24:569-572, 1980.

An animal model was employed to investigate whether there is a direct relationship beteen daily dosage of neuroleptics and the subsequent degree of increased behavioral response to dopaminergic agonism as well as striatal membrane dopamine binding. Guinea-pigs were given four different doses of chlorpromazine (CPZ) for 4 weeks and their subsequent behavioral response to a fixed dose of apomorphine was measured. After behavioral testing, 3H-dopamine binding was assayed in striatral membranes. Data show a direct correlation between the daily dosage of a neuroleptic and the degree of behavioral supersensitivity to apomorphine which is seen following chronic neuroleptic administration. The biochemical studies demonstrate that this behavioral hypersensitivity is associated with alterations in striatal dopamine binding. Results demonstrate that there are doses of chlorpromazine which can be given chronically without causing any subsequent behavioral supersensitivity. 17 references.

001846 Leysen, Josee E. Dept. of Biochemical Pharmacology, Janssen Pharmaceutica, B-2340 Beerse, Belgium **3H-Apomorphine receptors in various rat brain regions: a study of specific and nonspecific binding and the influence of chronic neuroleptic treatment.** Advances in Biochemical Psychopharmacology. 24:123-132, 1980.

Specific and nonspecific 3H-apomorphine binding in various rat brain regions and the influence of chronic neuroleptic treatment on such binding were investigated. Under appropriate conditions, 3H-apomorphine labels stereospecific sites in rat striatal membranes with high affinity. However, in EDTA-free media 3H-apomorphine has a very high tendency to bind nonstereospecifically to membranes. After chronic neuroleptic treatment, 3H-spiperone and 3H-apomorphine binding are elevated in rat striatum and rat nucleus accumbens plus tuberculum olfactorium in a similar way. The strong similarities between the sites labeled by the dopamine antagonists and the agonist make it less likely that antagonist sites should mainly be associated with postsynaptic receptors and agonist sites with presynaptic receptors. 16 references.

001847 List, Stephen; Seeman, Philip. Dept. of Pharmacology, University of Toronto, Toronto, Ontario, Canada M5S 1A8 **Neuroleptic/dopamine receptors: elevation and reversal.** Advances in Biochemical Psychopharmacology. 24:95-101, 1980.

The production and reversal of increased 3H-dopamine binding and behavioral supersensitivity produced by neuroleptic treatment are described, and the relevance of animal models of tardive dyskinesia to the clinicnl phenomena produced long-term neuroleptic treatment is discussed. Studies are described which suggest that dopamine agonists may be useful in treating tardive dyskinesia by reducing dopamine receptor binding and dopaminergic supersensitivity toward normal levels. Binding assays in supersensitive animals demonstrate increases in dopamine receptor number in the order of 20% to 40% over control values. However, the increases observed in direct binding assays may not be indicative of the true increase in receptor number. 27 references.

001848 Marwaha, Jwaharlal; Freedman, Robert; Hoffer, Barry. Dept. of Pharmacology, University of Colorado Health Sciences Center, Denver, CO 80262 **Electrophysiological changes at a central noradrenergic synapse during thallium toxicosis.** Toxicology and Applied Pharmacology. 56(3):345-352, 1980.

The actions of chronically-administered thallous acetate were studied electrophysiologically at a central noradrenergic synapse. Administration of thallous acetate to rats produced a significant increase in the spontaneous discharge rate of cerebellar Purkinje neurons. Experiments with various pharmacologic agents were performed to determine if this increase in spontaneous rate was due to interference with the noradrenergic innervation of the Purkinje neurons. Rats treated with thallous acetate were resistant to parenterally-administered amphetamine and haloperidol; these agents decrease and increase, respectively, the spontaneous Purkinje neuron discharge in control (sodium acetate treated) rats. The data suggest that thallium intoxication causes a reduction in catecholaminergic input into central neurons. Such changes may contribute to the neurological sequelae of thallium toxicosis. 23 references. (Author abstract modified)

001849 Massotti, M.; Alleva, F. R.; Balazs, T.; Guidotti, A. FDA, Bureau of Drugs, Division of Drug Biology, 200 C Street S.W., Washington, DC 20204 **GABA and benzodiazepine receptors in the offspring of dams receiving diazepam: ontogenetic studies.** Neuropharmacology. 19(10):951-956, 1980.

GABA and benzodiazepine receptors in the offspring of dams receiving diazepam were investigated, and the ontogenesis of the regulation of 3H-GABA and 3H-diazepam binding to rat brain plasma membranes treated with Triton X-100 was studied. The density of 3H-diazepam and 3H-GABA binding in cortex, cerebellum and corpus striatum at birth was approximately one third of the adult values. They increased at the same rate and reached the adult values between 14 and 21 days after birth. The capability of muscimol to stimulate 3H-diazepam binding in both frozen thawed and Triton-X-100-treated membrane preparations decreased with increasing age. Binding of 3H-GABA and 3H-diazepam to brain of newborn rats whose dams received diazepam throughout pregnancy was also studied. No significant differences were observed in the ontogenetic development of both bindings. However, in the cortex of these newborn rats, the capability of muscimol to stimulate 3H-diazepam binding was greatly reduced in Triton X-100 treated membranes. 28 references. (Author abstract modified)

001850 McKinney, W. T.; Moran, E. C.; Kraemer, G. W.; Prange, A. J., Jr. Primate Laboratory, University of Wisconsin, 22 North Charter St., Madison, WI 53706 **Long-term chlorpromazine in rhesus monkeys: production of dyskinesias and changes in social behavior.** Psychopharmacology. 72(1):35-39, 1980.

The daily administration of chlorpromazine (CPZ) in doses of 8 to 40mg/kg over 113 weeks to four rhesus monkeys produced dyskinesias and alterations in social behavior. General activity and social interactions were reduced by CPZ treatment but social aggression was elevated during initial drug administration. These behaviors returned to normal when treatment was discontinued. Dyskinesias appeared during CPZ treatment, and two striking ones, gravel mouth and hand gesture, persisted for 12 weeks after drug withdrawal. Results indicate that dyskinesias which share major features of human tardive dyskinesias can be produced in nonhuman primates by long-term CPZ treatment. 20 references. (Author abstract)

001851 Morgan, J. P.; Van Maanen, E. F. Div. of Cardiovascular Diseases and Internal Medicine, Mayo Clinic, Rochester, MN 55901 **The role of differential blockade of alpha-adrenergic agonists in chlorpromazine-induced hypotension.** Archives Internationales de Pharmacodynamie et de Therapie. 247(1):135-144, 1980.

The effects of chlorpromazine (CPZ) on pressor responses to norepinephrine and phenylephrine were studied in the isolated perfused hindlimbs of anesthetized dogs. CPZ had a greater inhibitory effect on the pressor response of phenylephrine than on the response of norepinephrine. This differential blockade was prevented by pretreatment with cocaine. CPZ acted as a classical competitive antagonist in the isolated femoral artery strip preparation. It is concluded that differences in affinity for the uptake system of adrenergic nerve endings account for the differential alpha-adrenergic blocking effect of CPZ. 20 references. (Author abstract modified)

001852 Nielsen-Kudsk, F.; Quist, Soren. Institute of Pharmacology, University of Aarhus, DK-8000 Aarhus C, Denmark **Effects of amitriptyline and clomipramine in the isolated, perfused rabbit heart.** Acta Pharmacologica et Toxicologica. 46(4):263-269, 1980.

The cardiac effects of subtherapeutic concentrations of two tricyclic antidepressants were studied in isolated rabbit hearts perfused with modified Krebs-Henseleit solution containing amitriptyline or clomipramine. Amitriptyline (0.25mcg/ml) caused a time-related decrease (20%) in the frequency of spontaneous beating and a pronounced decrease in the amplitude (62%) and rate (58%) of cardiac contraction. Maximum increases of the PQ interval and QRS complex were 46 and 100%, respectively. These effects were increased when the concentration of amitriptyline was doubled. Clomipramine (0.28mcg/ml) also had a marked negative ionotropic effect, but effects upon conduction velocities were not as pronounced as those produced by an equimolar concentration of amitriptyline. Changes in coronary flow were insignificant, and oxygen consumption did not decrease in proportion to the decrease in contractility. 20 references. (Author abstract modified)

001853 Roerig, David L.; Hasegawa, Andrew T.; Harris, Gerald J.; Lynch, Kenneth L.; Wang, Richard I. H. Research Service/151, Wood V. A. Medical Center, 5000 West National Avenue, Milwaukee, WI 53193 **Occurrence of corneal opacities in rats after acute administration of l-alpha-acetylmethadol.** Toxicology and Applied Pharmacology. 56(2):155-163, 1980.

The ability of l-alpha-acetylmethadol (LAAM) to induce ocular opacities was studied in rats. Between the third and fifth days after subcutaneous or oral administration of a single does of LAAM, a dose-dependent incidence of opacification of the anterior segments of rat eyes was observed. Opacities were localized to the cornea and the depth of corneal involvement varied from patches of grayish epithelium to full thickness involvement. Opacities were induced at doses similar to or lower than those necessary for pharmacological effects of LAAM such an analgesia and mydriasis. In rats made tolerant to morphine by implantation of a morphine pellet, a three-fold tolerance to LAAM-induced corneal opacities was observed. suggesting a CNS mechanism in the development of the observed corneal changes. 14 references. (Author abstract modified)

001854 Smol'nikova, N. M.; Strekalova, S. N. Lab. lekarstvennoy toksikologii Instituta farmakologii AMN SSSR, Moscow, USSR **/The development of progeny in cases of antenatal exposure to phenazepam./** Razvitiye potomstva pri antenatal'nom vozdeystvii fenazepama. Farmakologiya i Toksikologiya. 43(3):299-302, 1980.

The development of progeny in cases of antenatal exposure to phenazepam was studied in rats. Phenazepam was administered in different doses during pregnancy. A dose of 100 milligrams per kilogram was administered and then, during the study of the postnatal development of progeny it was established that the physical traits of the young of the females which had received the tranquilizer did not differ from the control animals. In cases of repeated doses of 10 milligrams per kilogram in the period of organogenesis, definite changes in the behavioral reactions of the progeny were noted. Results show that, in a dose of 100 milligrams per kilogram during different periods of pregnancy phenazepam exerts no embryotoxic or teratogenic effects recorded by means of the routine procedures applied in teratological studies. In a dose of 10 milligrams per kilogram, however, phenazepam affects the formation of behavioral reactions in the postnatal period of ontogenesis. 9 references. (Journal abstract modified)

001855 Strubelt, O. Institute fur Toxikologie, Medizinische Hochschule Lubeck, Ratzeburger Allee 160, D-2400 Lubeck, Germany **Hemodynamic failure induced by narcotic and toxic doses of 12 CNS depressants in intact and pithed rats.** Archives Internationales de Pharmacodynamie et de Therapie. 246(2):264-276, 1980.

The cardiovascular effects of hexobarbital, pentobarbital, secobarbital, methaqualone, chloral hydrate, urethane, ethanol, guaiphenesine, meprobamate, diazepam, and chlorpromazine were studied in intact and pithed male Wistar rats. Results showed that hemodynamic failure induced by narcotic doses of CNS depressants is mainly due to a depression of the vasomotor centers and an impairment of cardiovascular reflex control. At higher doses, the drugs appeared to have direct cardiovascular depressive effects. 11 references. (Author abstract modified).

001856 Tobis, Jonathan M.; Aronow, Wilbert S. University of California, Irvine, 101 City Drive South, Orange, CA 92668 **Effect of amitriptyline antidotes on repetitive extrasystole theshold.** Clinical Pharmacology and Therapeutics. 27(5):602-606, 1980.

Amitriptyline reduced the repetitive extrasystole theshold (RET) in dogs from 28.8 to 8.2mamp. Physostigmine, propranolol, sodium bicarbonate, and left stellate ganglionectomy reversed the effect of amitriptyline on RET. Results suggest that amitriptyline overdose predisposes to sudden death by lowering the ventricular fibrillation threshold. This cardiotoxic efect is mediated partly though the CNS and can be inhibited by increased plasma binding (bicarbonate) cholinergic stimulation (physostigmine), beta-adrenergic blockade (propranolol), and sympathetic denervation (left stellate ganglionectomy). 15 references. (Author abstract modified)

001857 Toide, K.; Kitazato, K.; Unemi, N. Div. of Pharmacology, Research Laboratory, Taiho Pharmaceutical Co. Ltd., Ebisuno 224-2, Kawauchi, Tokushima 771-01, Japan **Effects of 1,3-bis(tetrahydro-2-furanyl)-5-fluoro 2,4-pyrimidinedione (FD-1) on the central nervous system: 1. Effects on monamines in the brain.** Archives Internationales de Pharmacodynamie et de Therapie. 247(2):243-256, 1980.

To determine the origin of the cerebral side-effects of the widely used cancer chemotherapy agent, 1,3-bis(tetrahydro-2-furanyl)-5-fluoro-2,4-pyrimidinedione (FD-1), the effect of the drug on brain monoamines was determined in male Wistar rats. Chronic adminstration of FD-1 increased the concentration of the drug metabolites 5-fluoro-2,4-pyrimidinedione (5-FU) and gamma-hydroxybutyrate (GHB) in all parts of the brain. Acute treatment with FD-1 and GHB increased the concentration of dopamine (DA) in the corpus striatum. Treatment with FD-1,

GHB, or 5-fluoro-1-(tetrahydro-2-furanyl)-2,4-pyrimidinedione (FT) decreased the level of acetylcholine (ACh) in the corpus striatum. Treatment with 5-FU decreased the level of 5-hydroxytryptamine in the corpus striatum and hypothalamus. FD-1, FT, 5-FU, or GHB decreased the level of ACh in the brainstem. Results suggest that the increase in GHB and 5-FU induced by FD-1 may alter the release and metabolism of DA. 31 references. (Author abstract modified)

001858 Waddington, John L.; Gamble, Stephen J. Div. of Psychiatry, MRC Clinical Research Centre, Harrow, Middlesex HA1 3UJ, England **Neuroleptic treatment for a substantial proportion of adult life: behavioural sequelae of 9 months haloperidol administration.** European Journal of Pharmacology. 67(4):363-369, 1980.

Spontaneous activity was depressed by 30 to 40% in male Sprague-Dawley rats 1 week, 3.5 months, and 9 months after initiation of chronic treatment with haloperidol (1.5mg/kg/day in drinking water). Apomorphine stereotypy was also depressed after 9 months of treatment. However, both measures were elevated 7 to 10 days after the chronic treatment was terminated. Results are discussed in relation to dopaminergic supersensitivity, schizophrenia and tardive dyskinesia, and dopamine receptor heterogeneity. 24 references. (Author abstract modified)

06 METHODS DEVELOPMENT

001859 Barlow, R. B.; Burston, K. N. Dept. of Pharmacology, Medical School, Bristol BS8 1TD, England **The ionization of 5-hydroxytryptamine and related compounds and an appraisal of methods for the estimation of zwitterion constants.** British Journal of Pharmacology. 69(4):587-595, 1980.

The dissociation constants of 5-hydroxytryptamine (5-HT) and 5-hydroxy-N,N-dimethyltryptamine were measured, and the zwitterion constants were estimated by several methods. Results suggest that zwitterions may be stabilized by factors that stabilize water structure. The proportion of 5-HT present as the neutral molecule or zwitterion in physiological conditions appears to be small, but the proportion of dopamine present as the zwitterion could be as large as 10% 4 references. (Author abstract modified)

001860 Bauer, Anna C.; Schwabe, Ulrich. Schwabe: Institut fur Pharmakologie und Toxikologie der Universitat Bonn, Reuterstrasse 2b, D-5300 Bonn 1, West Germany **An improved assay of cyclic 3',5'-nucleotide phosphodiesterases with QAE-Sephadex columns.** Naunyn-Schmiedeberg's Archives of Pharmacology. 311(2):193-198, 1980.

An assay of cyclic nucleotide phosphodiesterases is described which is suitable for kinetic analysis of crude enzyme preparations from micromolar to millimolar substrate concentrations. The procedure includes chromatographic separation of cyclic nucleotides and nucleosides on QAE A-25 Sephadex columns and 5'-nucleotidase as an auxiliary enzyme. The assay allows quantitative recovery of adenosine, guanosine, and their metabolites from the anion exchanger. Lower assay blanks and higher recoveries of nucleoside catabolites make this method more sensitive than others reported in the literature. 19 references. (Author abstract modified)

001861 Bozarth, Michael A.; Wise, Roy A. Center for Research on Drug Dependence, Dept. of Psychology, Concordia University, Montreal, Quebec, Canada H3G 1MS **Electrolytic microinfusion transducer system: an alternative method of intracranial drug application.** Journal of Neuroscience Methods. 2(3):273-275, 1980.

An intracranial microinfusion system that can reliably deliver nl volumes of drug in freely-moving animals is described. The reliability of drug delivery is improved by the elimination of the flexible tubing and fluid swivel in most microinjection systems. The method also permits simultaneous application of drug to multiple brain sites. 5 references. (Author abstract modified)

001862 Burne, Thomas A.; Tilson, Hugh A. National Institute of Environmental Health Sciences, P.O. Box 12233, Research Triangle Park, NC 27709 **Titration procedure with rats using a nose poke response and tail shock.** Pharmacology Biochemistry and Behavior. 13(5):653-656, 1980.

An operant titration procedure that provides relatively stable within-session shock thresholds within a week of training is described. Rats are placed into plexiglas restraint tubes having a hole at one end through which the animal can poke its nose to break a photobeam; when the photobeam is broken, a response is counted. The tail of the animal is firmly held by a plexiglas plug and an electrode connected to a programmable titration shocker is attached to the tail. Conditioned nose poke responses are made after about 15-min during the first 30 min session. The titration procedure was found to be sensitive to the analgesic effect of morphine. The technique offers several advantages in the study of chemically-induced alterations in pain or reactivity, including rapidity of initial training, relatively short time to establish median shock thresholds, minimum involvement of motor components in the response, and sensitivity to a psychopharmacological tool. 15 references. (Author abstract modified)

001863 Cobbett, P. Dept. of Physiology and Pharmacology, University of St. Andrews, St. Andrews, Fife, Scotland **A novel three-way tap.** Journal of Neuroscience Methods. 3(1):101-104, 1980.

A tap permitting changes among three perfusion solutions is described. The tap consists of three discs that can be rotated against each other to direct solutions into waste or experimental chambers. The tap has been used successfully in electrophysiological experiments on hippocampal slices. 1 reference.

001864 Dingledine, Raymond; Dodd, Jane; Kelly, J. S. Dept. of Pharmacology, Medical School, University of North Carolina, Chapel Hill, NC 27514 **The in vitro brain slice as a useful neurophysiological preparation for intracellular recording.** Journal of Neuroscience Methods. 2(4):323-362, 1980.

Current methods for preparing brain slices are reviewed, with reference to the tissue chopper or vibratome, composition of artificial cerebrospinal fluid, design of slice chambers, and electrophysiological tests for viability. Intracellular studies of the hippocampal slice preparation are described, including studies of synaptic mechanisms and dendritic properties, epileptogenesis, synaptic plasticity, and iontophoresis of glutamate, GABA, acetylcholine, and peptides. Experimental advantages of the slice preparation, particularly its stability, are discussed and the fidelity with which brain slices mimic brain tissue in situ is questioned. 185 references.

001865 Erickson, Carlton K.; Koch, Kathe I.; McGinity, James W. College of Pharmacy, University of Texas, Austin, TX 78712 **Subcutaneous silastic implants: maintenance of high blood ethanol levels in rats drinking a liquid diet.** Pharmacology Biochemistry and Behavior. 13(6):781-786, 1980.

A new subcutaneous form of ethanol exposure in rats is described. The sustained ethanol release tube (SERT) for rats is similar to an earlier device reported for mice, except that only one refill per day is required. This device, plus an intragastric

loading dose for initially raising blood ethanol levels, is capable of maintaining high levels for greater than 12 hours. Supplementation of SERT released ethanol with a sustacal chocolate-flavored diet with 37% of total energy as ethanol produced high, stable blood ethanol levels for indefinite periods. Maintenance of such levels for 9 days is sufficient to cause dramatic withdrawal signs when ethanol exposure is stopped. The method is described as useful for conveniently and quickly producing physical dependence to ethanol in rats. 17 references. (Author abstract modified)

001866 File, Sandra E. Dept. of Pharmacology, School of Pharmacy, University of London, 29/39 Brunswick Square, London WC1N 1AX, England **The use of social interaction as a method for detecting anxiolytic activity of chlordiazepoxide-like drugs.** Journal of Neuroscience Methods. 2(3):219-238, 1980.

Methods of screening drugs for anxiolytic activity are reviewed, with emphasis on the social interaction test. Validation of the social interaction test by behavioral, physiological, and pharmacological criteria is described. The effects of ethanol, corticosterone, propranolol, meprobamate, sodium phenobarbitone, and various benzodiazepines in the social interaction test are outlined. 40 references.

001867 Forrest, I. S.; Green, D. E.; Blum, A.; Serra, M. T.; Loeffler, K. O. VA Medical Center, 151F, Palo Alto, CA 94304 **Studies on thioridazine and mesoridazine metabolism. I. Protein binding.** Communications in Psychopharmacology. 3(5):319-322, 1979.

Differences in protein binding between thioridazine and mesoridazine were demonstrated by equilibrium dialysis. This technique was found to be more suitable than gel filtration for demonstrating protein binding characteristics when tritiated drugs and radioquantitation of the bound and free drug fractions were used. Results indicated that mesoridazine binds less than thioridazine to plasma and serum proteins, leaving available a higher percentage of therapeutically-active unbound drug. 7 references. (Author abstract modified)

001868 Hylden, Janice L. K.; Wilcox, George L. Wilcox; Dept. of Pharmacology, 3-260 Millard Hall, 435 Delaware St. SE, Minneapolis, MN 55455 **Intrathecal morphine in mice: a new technique.** European Journal of Pharmacology. 67(2/3):313-316, 1980.

A new intrathecal injection technique was used to study the effects of morphine in male Swiss-Webster mice. After injection of 3H-morphine base by lumbar puncture, significant quantities of radioactivity were not found in midbrain or forebrain. Submicrogram quantities of morphine sulfate induced Straub tail response and tail-flick analgesia. These effects were dose-related and antagonized by naloxone. 9 references. (Author abstract modified)

001869 Jovanovic, U. J.; Hofmann, W. E. Universitats-Nervenlkin und Poliklinik, Fuchsleinstrasse 15, D-8700 Wurzburg, West Germany **/Sleep profile and ultradian sleep periodicity in humans under the influence of a butyrophenone derivative: I. Sleep correction in subjects with oligosymptomatic sleep disorders./** Schlafprofil und ultradiane Schlafperiodik beim Menschen unter Wirkung eines Butyrophenon-Derivats. I. Mitteilung: die Korrektur des Schlafes bei Personen mit oligosymptomatischen Schlafstorungen. Arzneimittel-Forschung. 29(3):574-579, 1979.

Sleep profile and ultradian sleep periodicity were investigated in 10 patients with oligosymptomatic sleep disturbances under the effect of a butyrophenone derivative, methylperone (melperone, Eunerpan). It was found that: 1) light sleep is shortened significantly under methylperone in a dose-dependent manner; 2) deep sleep is lengthened on the whole and decreased during the first third of the night and the first sleep period; and 3) REM sleep duration is increased significantly. It is concluded that methylperone distinguishes itself in essential aspects from most other hypnotics and psychopharmaceutical agents in relation to its effects on sleep profile and sleep periodicity in persons suffering from sleep disorder disturbances. 41 references. (Journal abstract modified)

001870 King, Alan Gary. University of Toronto (Canada) **A pharmacological investigation of an animal model of the petit mal seizure. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2141-B, 1980. (Not available from Univ. Microfilms), 1980.

The flash-evoked afterdischarge (FEAD) in rat brain, an animal model of the petit-mal seizure, was used to screen antiepileptic drugs in a number of studies. The FEAD model was superior to the widely-used metrazol clonic seizure model in predicting the therapeutic efficacies of mephenytoin and especially of d-amphetamine. Norepinephrine appeared to be involved in the suppression of FEAD by d-amphetamine, and other drugs, which increase the release of norepinephrine by a mechanism unrelated to d-amphetamine, also suppressed FEAD. Results of experiments with GABA-agonists and antagonists indicate that this inhibitory neurotransmitter plays an important role in the elaboration of FEAD and thus possibly in petit-mal seizure. It is concluded that FEAD is a valid model of the petit-mal seizure with predictive ability for screening antiepileptic drugs, and that it possesses a number of advantages over other petit-mal seizure models. (Journal abstract modified)

001871 Kumar, R. Institute of Psychiatry, London, England **Animal models of psychiatric disorders.** Handbook of Biological Psychiatry. Part 1:337-358, 1979.

The implications for biological psychiatry of animal models of psychiatric disorders are reviewed, and animal models of schizophrenic disorders, manic-depressive disorders, neurotic disorders, and drug dependence are described. Topics discussed include: model psychoses; disorders of motivation; stereotyped behavior; behavioral models of depression; learned helplessness; tests of separation; experimental neurosis; anxiety states and phobias; obsessive-compulsive neurosis; hysterical neurosis; depressive neurosis; animal models of the psychotropic effects of stimulants; sedatives/hypnotics, hallucinogens, nicotine and opioids. It is contended that the two most important applications of animal models to psychiatric disorders have been in the field of behavior modification and in early drug evaluation programs. 103 references.

001872 Li-Wan-Po, A.; Irwin, W. J. Irwin: Dept. of Pharmacy, University of Aston, Birmingham B4 7ET, England **The photochemical stability of cis- and trans-isomers of tricyclic neuroleptic drugs.** Journal of Pharmacy and Pharmacology. 32(1):25-29, 1980.

Irradiation of flupentixol, clopenthixol, and chlorprothixene induced rapid cis/trans isomerization. Further decomposition to thioxanthene derivative occurred rapidly in the presence of air. Exclusion of oxygen did not prevent further degradation, however, and a slower secondary isomerization was observed with prolonged irradiation. Doxepin and dothiepin underwent analogous reactions, but the isomerizations were much slower and the oxidative degradation yielded many products. 15 references. (Author abstract modified)

001873 Lindsay, Wayne S.; Kizzort, Bradford L.; Justice, Joseph B.; Salamone, John D.; Neill, Darryl B. Justice: Dept. of Chemistry, Emory University, Atlanta, GA **An automated electrochemical method for in vivo monitoring of catecholamine release.** Journal of Neuroscience Methods. 2(4):373-388, 1980.

A computer-controlled electrochemical system for monitoring catecholamines and their metabolites in vivo is described. The system consists of a microcomputer, real time interface board, and a commercial electrochemical instrument. The system has been used for long-term in vivo monitoring and to detect changes in the level of oxidizable species after amphetamine administration. 25 references. (Author abstact modified)

001874 Medilanski, P.; Corthay, J.; Benakis, A. Dept. of Pharmacology, School of Medicine, 20, rue de l'Ecole de Medecine, CH-1211 Geneva 4, Switzerland **Comparative study of the inductive effect of two psychomoderators -- Tetrabamate and Complexe 1656 -- and of phenobarbital on liver microsomal enzymes in rats.** Arzneimittel-Forschung. 29(9):1398-1401, 1979.

The induction effect of tetrabamate (Atrium) and Complexe 1656, two psychosedative drugs which are complexes formed by phenobarbital with its N-substituted derivatives, was investigated in microsomal liver enzymes of male rats. Tetrabamate and Complexe 1656 were equally effective in increasing the amount of microsomal proteins, cytochrome P-450 and the in vitro aniline p-hydroxylation and aminopyrine N-demethylation activity. These effects were similar to those obtained after treatment with an equivalent dose of phenobarbitol. Febarbamate and difebarbamate had no significant effect on microsomal enzymes. The inductive effect of tetrabamate and of its analogue seems essentially due to the phenobarbital content of these complexes. (Journal abstract modified)

001875 Nielsen, Erik B.; Ellison, Gaylord. Sct. Hans Hospital, Research Lab., dept. E, 4000 Roskilde, Denmark **A silicone pellet for long-term continuous administration of amphetamine.** Communications in Psychopharmacology. 4(1):17-20, 1980.

An inexpensive silicone pellet for producing very prolonged periods of continuous low levels of amphetamine is described. This pellet contains 100 mg of amphetamine base, 50% of which is released during the 28 days after subcutaneous implantation in rats. Motor stereotypies do not develop, but a long-lasting hyperactivity is produced. The effects of this kind of drug administration have been relatively unexplored previously and can have relevance for theories of endogenously produced psychomimetics in human psychopathology. 7 references. (Author abstract)

001876 Schonfeld, A. R.; Glick, S. D. Dept. of Neurology and Pathology (Neuropathology), Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461 **Neuropharmacological analysis of handling-induced seizures in gerbils.** Neuropharmacology. 19(10):1009-1016, 1980.

Several studies were conducted to evaluate the suitability of handling induced seizures of the Mongolian gerbil for pharmacological screening purposes. Seizure behavior remained consistent during repeated daytime testing at weekly intervals. When tested at night, seizure magnitude and frequency increased significantly from daytime scores and animals maintained the higher baseline with repeated nocturnal testing. Drug testing of seizure sensitive gerbils revealed that four of the five vehicles, including water, significantly inhibited seizure activity; only saline had no effect. Four prototypical anticonvulsant drugs reduced seizure activity; diphenylhydantoin, pentobarbital, phenobarbital, and ethosuximide. Trimethadione was ineffective while diazepam and carbamazepine could not be evaluated. Results indicate that complex interactions between nonspecific behavioral and pharmacological factors may limit the reliability of this model. 47 references. (Author abstract modified)

001877 Sokoloff, Louis. Laboratory of Cerebral Metabolism, NIMH, Bethesda, MD 20205 **Theory, procedure, and applications of the radioactive deoxyglucose method for the measurement of local glucose utilization in the central nervous system. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 138 p.

The radioactive deoxyglucose method for the measurement of local glucose utilization in the central nervous system, which has become a potent new tool for mapping functional neural pathways on the basis of evoked metabolic responses, is discussed. Issues covered include: the theoretical basis of the radioactive 2-deoxyglucose method; the experimental procedure for measurement of local cerebral glucose utilization; theoretical and practical considerations and limitations; rates of local cerebral glucose utilization in the normal conscious state; effects of general anesthesia; relation between local functional activity and energy metabolism; mechanism of coupling of local functional activity and energy metabolism; applications of the deoxyglucose method; and recent technological developments. 113 references.

001878 Sriwatanakul, Kampon; Nahorski, Stefan R. Nahorski: Dept. of Pharmacology Medical Sciences Bldg., University of Leicester, University Rd., Leicester, LE1 7RH, England **Disposition and activity of beta-adrenoceptor antagonists in the rat using an ex vivo receptor binding assay.** European Journal of Pharmacology. 66(2/3):169-178, 1980.

An ex vivo receptor binding assay was used to study the disposition and activity of beta-adrenoceptor antagonists in male Wistar rats. After the animals were treated with different doses of beta-adrenoceptor antagonists the extent of receptor occupation was assessed under in vitro conditions. Results show that (-)-propranolol was about 100 times more potent than ()-propranolol in all tissues examined and that both isomers were somewhat selected for lung and spleen over heart, cortex, and cerebellum. The betal-selective antagonist ()-atenolol showed selectivity for tissues known to possess a predominance of betal-adrenoceptors, but its penetration into the CNS was substantially less than that of propranolol. 25 references. (Author abstract modified)

001879 Swartz, Conrad M.; Stenberg, David. Dept. of Psychiatry, University of Iowa Hospitals and Clinics, Iowa City, IA 52244 **Quickly-made cannula for repeated cerebrospinal fluid sampling in rats.** Communications in Psychopharmacology. 4(3):241-245, 1980.

The construction and implantation of a cannula for repeated sampling of cerebrospinal fluid and ventriculocisternal perfusion is described. The system minimizes leakage, CSF losses in transfer, and deadspace volume inside the cannula. The cannula can be constructed quickly from commonly available materials, functions properly for weeks, and permits collections of 30 to 250 microliters per sample in unanesthetized and unrestrained animals. 10 references. (Author abstract modified)

001880 Taylor, John E.; Richelson, Elliott. Richelson: Dept. of Pharmacology, Mayo Foundation, Rochester, MN 55901 **High affinity binding of tricyclic antidepressants to histamine H1-receptors: fact and artifact.** European Journal of Pharmacology. 67(1):41-46, 1980.

Six tricyclic antidepressants were tested for ability to inhibit the binding of the histamine H1-receptor antagonist (3H)pyrilamine to membrane fractions from male Sprague-Dawley rat whole brain. Inhibition constants (ki) calculated for the antidepressants correlated well with equilibrium dissociation constants derived from biological assays of the H1-receptor. An increase in the concentration of receptors in the biding assay led to an overestimation of the calculated Ki's for doxepin, amitriptyline, and nortriptyline, but not for lower affinity compounds (imipramine, protriptyline, and desipramine). 20 references. (Author abstract modified)

001881 Vellucci, Sandra V.; Webster, R. A. Dept. of Pharmacology, University College London, Gower St., London WC1E 6BT, England **Studies on GABA release in vivo using a simple method for perfusion of the fourth ventricle of the rat.** Neuropharmacology. 19(11):1099-1104, 1980.

A procedure for perfusion of the fourth ventricle of the anesthetized rat was developed and used to study GABA release. The cerebellum and other tissues bordering the fourth ventricle were loaded wih (14C)-GABA prior to application of drugs or depolarizing stimuli. Isoosmotic artifical cerebrospinal fluid containing 50mM potassium produced a calcium-dependent increase in the efflux of radioactivity (80% of which was present as GABA). The GABA uptake blocker, beta-alanine, increased the spontaneous and potassium-stimulated efflux of GABA. 29 references. (Author abstract modified)

001882 Vincent, Jean-Pierre; Vignon, Jacques; Kartalovski, Branko; Lazdunski, Michel. Lazdunski: Centre de Biochimie du CNRS, Universite de Nice, Parc Valrose, F-06034 Nice Cedex, France **Binding of phencyclidine to rat brain membranes: technical aspect.** European Journal of Pharmacology. 68(1):73-77, 1980.

Studies of (3H)phencyclidine binding to rat brain synaptosomes showed that (3H)phencyclidine tends to adsorb to filters used to separate bound from free drug. A rapid filtration technique that can overcome this difficulty is described. The affinity of (3H)phencyclidine for its brain receptor was four times higher in a medium containing 5mM salt than in a medium containing 50mM salt. 5 references. (Author abstract modified)

001883 Wenger, Galen R. Dept. of Pharmacology, University of Arkansas for Medical Sciences, Little Rock, AR 72205 **Cumulative dose-response curves in behavioral pharmacology.** Pharmacology Biochemistry and Behavior. 13(5):647-651, 1980.

The utility of the cumulative dose/response curve as a parameter of treatment effects in behavioral pharmacology was assessed using a multiple timeout 5-min, fixed-ratio 30 (TO5,FR30) schedule. At the start of each TO5 component, an i.p. injection of d-amphetamine, pentobarbital, morphine, ketamine, or phencyclidine was administered, and the effect on the response rate during the following 15 presentations of the FR30 schedule was assessed. All drugs produced dose-related decreases in FR responding in mice. In each case, the lowest dose tested was without effect, and the highest dose tested essentially eliminated responding. As a control, the normal fourth dose in the ascending series of each drug was given preceded by three saline injections. Whether this dose of each drug was preceded by three separate saline injections or by three lower ascending doses of the same drug, the observed effect was identical. Five consecutive saline injections during the experimental session were without effect. The application of this procedure should greatly decrease the time required to examine the behavioral effects of a wide range of doses. 6 references. (Author abstract modified)

001884 Yang, H.-Y. T.; Costa, E. Laboratory of Preclinical Pharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Estimating** Advances in Biochemical Psychopharmacology. 20:131-142, 1979.

Methods for estimating the turnover of brain enkephalins in vivo are discussed, and precision of a method depends on the degree of knowledge of the given peptide's precursors, metabolites, and rate-limiting enzymes. General guidelines for the purification and identification of brain peptides are given, and attempts to measure the turnover of striatal met5-enkephalin are described. Since the in vivo pathways for synthesis and catabolism of enkephalins are not known, it is difficult to study the regulation of enkephalin metabolism by measuring turnover rate. Present evidence indicates that met5-enkephalin and leu5-enkephalin in striatum, adrenal medulla, and sympathetic ganglia are not derived from beta-endorphin or leu5-beta-endorphin. 31 references.

001885 Zaczek, Robert; Simonton, Sue; Coyle, Joseph T. Coyle: Dept. of Pharmacology, Johns Hopkins University School of Medicine, 725 North Wolfe St., Baltimore, MD 21205 **Local and distant neuronal degeneration following intrastriatal injection of kainic acid.** Journal of Neuropathology and Experimental Neurology. 39(3):245-264, 1980.

A study of neuronal cell loss after intrastriatal injection of kainic acid in male Sprague-Dawley rats revealed varying degrees of degeneration beyond the primary site of the lesion. Extensive damage to extrastriatal regions was observed in some cases, particularly in the pyriform cortex, bed nucleus, nucleus accumbens, and hippocampus. The pattern of degeneration was influenced by the amount of kainic acid injected, its biological activity, its diffusion, the duration of anesthesia, and variable sensitivity of neurons. Lesions highly localized to the striatum were obtained with a low dose (2,3 nmoles) of kainic acid in ether anesthetized animals, but some neuronal damage to the overlying cerebral cortex was observed. 26 references. (Author abstract modified)

CLINICAL PSYCHOPHARMACOLOGY

07 EARLY CLINICAL DRUG TRIALS

001886 Ananth, Jambur V.; Van den Steen, Nancy. Allan Memorial Institute, 1025 Pine Ave. West. Montreal, P.Q., H3A 1A1, Canada **The place of loxapine -- a new neuroleptic drug.** Psychiatric Journal of the University of Ottawa. 5(4):279-282, 1980.

The use of loxapine, a new neuroleptic drug is discussed. Loxapine succinate is a dibenzazepine compound with neuroleptic properties. Review of clinical trials indicates that this drug, although effective in treating psychotic patients, has no particular advantage over existing drugs. Data do not indicate anxiolytic properties. Loxapine may be useful in treating some patients who are resistant to other neuroleptics. Loxapine has been reported to lower the convulsive threshold. Sedation and extrapyramidal symptoms, including dystonia, may be troublesome to some. Younger patients, shorter duration of psychosis, affective component, and agitation are good indicators for loxapine. 30 references. (Author abstract modified)

001887 Assicot, Michel. Hopital Psychiatrique, F-29210 (Finistere) Morlaix, France **/Minaprine and inhibition./** Minaprine et inhibition. Psychologie Medicale. 12(B):89-95, 1980.

The effects of minaprine were tested on hospitalized patients and outpatients suffering from psychomotor inhibition. The subjects were six females and four females 20 to 62 years old, suffering from a clear or atypical schizophrenic syndrome, and two patients suffering from neurotic depressions (one female 30 years old, one male 46 years old). Inhibition in psychiatry is a generic term: in the area of intellect, inhibition reflects a decrease of activity with defective concentration, elective memory disorders, postemotional or periodic disorders; and in the area of instinct, it results in disorders of sleep, eating, and sexuality. Also, there are inhibitions of an emotional origin. In the cases under study, it was found that minaprine can be used conveniently even in cases of serious psychotic disorders in combination with neuroleptics. The tolerance was always excellent, even in cases of intoxication. Schizophrenic patients showed improvements in personal relationship and social life. The new drug (the brand name is Cantor) can be used to treat light states of depression and to correct secondary effects of neuroleptics. A brief discussion with M. Assicot follows the text of the article. 2 references.

001888 Balon, R.; Kabes, J.; Papezova, H.; Dostal, T. Institute of Psychiatry, 181 03 Prague 8-Bohnice, Czechoslovakia **Comparison of the classical and retarded form of lithium carbonate.** Activitas Nervosa Superior. 22(3):174, 1980.

The utility and clinical efficacy of a new long-acting form of lithium carbonate (lithium carbonicum retard) were assessed and compared with the traditional dosage and form of lithium carbonate treatment (900mg to 1500mg, three times daily). Lithium carbonicum retard was administered to 24 inpatients and outpatients with different types of manic-depressive illness and also with schizoaffective psychosis. The dosage was from 1000mg to 2000mg of lithium carbonicum retard two times daily. Clinical state of the experimental and control groups was evaluated by the BPRS and DHRS and side-effects, as well as physiological indicators, were monitored. Results indicate that the sustained release preparation is well tolerated, with better pharmacokinetic properties than the classical form of lithium carbonate. 4 references.

001889 Cullerre, Padrig. 15, rue de l'Assemblee-Nationale, F-56100 Lorient, (Morbihan) France **/Trial with minaprine in Ss with psychiatric disorders./** Essai de la minaprine en milieu psychiatrique. Psychologie Medicale. 12(B):81-87, 1980.

The effects of minaprine on 33 patients with psychiatric problems were studied. The subjects were 29 new patients seeking psychiatric help and four hospitalized mental patients, whose main symptom was inhibition. The treatment lasted from 3 days to 18 months, with a average of 192 days. The dose of minaprine varied between 100 and 300mg and was administered two to three times a day. Good and very good results were obtained in 15 cases (53%). Minaprine was active only in cases of asthenia with inhibition, particularly sexual asthenia. It is a very helpful adjuvant in cases of neurotic depressions and chronic psychoses. Its tolerance is good. Thirty-eight electroencephalograms were taken. Seventeen patients had EEGs taken before drug treatment; under treatment, 9 showed variations reflecting an increase of amplitude of cerebral electrogenesis and an increase in basal rhythm reactions, but paroxysmal anomalies were not evidenced. A brief discussion with D. Cullerre follows the text of the article.

001890 De Buck, R. P. Institute of Psychiatry, Brugmann University Hospital, Bruxelles, Belgium **Possible clinical applications of nootropics.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 882-886).

The clinical application of a new class of drugs, the nootropics, to the treatment of alcoholism and other diseases is reported. The results confirm data from animal pharmacology and show that piracetam: 1) facilitates alcoholic and toxicomaniac withdrawal, 2) improves cognitive and memory disorders of chronic alcoholics, 3) protects against cerebral hypoxia and improves mental performance after its occurrence, 4) raises level of consciousness after head injury, 5) improves postconcussional vertigo and headache, 6) improves impaired alertness, asthenia and psychomoter agitation in senile psychoorganic syndrome, and 7) protects against induced memory-dysfunction. It also enhances mental performance in normal Ss and is devoid of side-effects and toxicity commonly found with psychotropics. Its effectiveness should positively influence the development of drugs which affect the higher telencephalic integrative activities, allow optimal performance of the brain in its interaction with the environment, protect it against hazards, and help slow down the aging process. 27 references. (Author abstract modified)

001891 Demange, Jean; Poirier, Jean-Louis. Laboratoire de Medecine Aerospatiale, F-91220 Bretigny-sur-Orge (Essonne), France **/Action of tofisopam on the ergonomic vigilance level. Its interaction with the effects of alcohol. Clinical pharmacological study./** Action du tofisopam sur le niveau de vigilance ergonomique. Son interaction avec les effets de l'alcool. Etude de pharmacologie clinique. Psychologie Medicale. 12(9):1993-2007, 1980.

The effects of tofisopam, a new benzodiazepine, on the vigilance level and its interaction with alcohol were studied. Ten Ss were administered tofisopam separately or in combination with a single dose of 30g alcohol in a double-blind trial. Ss were instructed to visually track on two axes and to measure reaction times (recognition of luminous signs). Statistical analysis of the results indicates no action of tofisopam on the vigilance level, and no potentialization of the drug on human behavioral changes caused by acute ingestion of alcohol. 9 references. (Journal abstract modified)

001892 Deniker, Pierre. Service Hospitalo-Universitaire de Sante Mentale et de Therapeutique, 100-102 rue de la Sante, F-

75674 Paris Cedex 14, France **Principles of French pharmacoclinical classification.** Progress in Neuro-Psychopharmacology. 4(4/5):455-468, 1980.

The principles of the French pharmacoclinical classification of psychotropic drugs are reviewed, and difficulties arising from the subdivisions within the different groups are discussed. Problems of classification of new compounds or borderline new drugs are discussed. Important aides to classification of drugs are the EEG and the biochemistry of neurotransmitter function. Present and future sophisticated computer techniques for classification are discussed. 12 references. (Author abstract modified)

001893 Fieve, Ronald R.; Meltzer, Herbert L.; Dunner, David L. New York State Psychiatric Institute, New York, NY **Clinical trials with rubidium chloride in depressed patients.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1128-1131).

Clinical data are presented on 25 bipolar and unipolar depressed patients who were refractory to other forms of treatment and who underwent a trial of rubidium chloride (RbCl) for 2 to 4 weeks in an inpatient metabolic unit. The highest value for plasma Rb was .44MEq/l and total retained Rb reached a maximum peak of 486mEq/l with a maximum replacement of total body K with Rb reaching 12%. A total of 70% of Ss remaining in the trial for 4 weeks had good to excellent antidepressant effects. When the concentration of Rb in erythrocytes was relatively high, the number of days during which the patient was depressed was reduced and the severity of the depression was less than before or after Rb treatment. These results, along with those from three other studies with different designs on affective disorders and in schizophrenia, suggest that RbCl when given to depressed retarded patients results in a positive antidepressed response with an increase in mood and activity. In some Ss, rubidium seems to increase the number of days in mania at the expense of the depressive phase and also to reduce the extremes of mood. Rubidium did not seem to produce any severe side-effects with the doses administered. 14 references. (Author abstract modified)

001894 Fink, Max. Dept. of Psychiatry and Behavioral Science, School of Medicine, State University of New York, Stony Brook, NY 11790 **An objective classification of psychoactive drugs.** Progress in Neuro-Psychopharmacology. 4(4/5):495-502, 1980.

The utility of EEG classification of psychoactive drugs is described, and its superiority over other classificatory schemes is discussed. It is contended that the measurement of EEG frequency, amplitude, variability, and pattern provides an objective and useful basis for classification of established psychoactive drugs, to assess new drugs, and to estimate their pharmacodynamics. The EEG system is based on a theory of association of EEG and behavior after psychoactive drugs; it is reliable and reproducible and numerous laboratories carry out the analyses. The relative independence of EEG systems from intuition makes it the most objective psychoactive drug classification system available. 32 references. (Author abstract modified)

001895 Grunberger, Josef; Saletu, Bernd. Section of Pharmacopsychiatry, Psychiatrische Universitatsklinik Vienna, Wahringer Gurtel 74-76, A-1090 Vienna, Austria **Determination of pharmacodynamics of psychotropic drugs by psychometric analysis.** Progress in Neuro-Psychopharmacology. 4(4/5):417-434, 1980.

The utility of psychological tests and psychometeric analysis in the determination of pharmacodynamics of psychotropic drugs is discussed. It is noted that by means of quantitative evaluation of drug-induced changes in attention, concentration, attention variability, psychomotor behavior, critical flicker fusion frequency, Archimedean spiral, reaction time, mood and affectivity, it is possible to determine pharmacodynamic properties of a drug. The relationship between blood level, brain activity and psychometric changes after drug administration are investigated with a number of drugs. 26 references. (Author abstract modified)

001896 Kamoun, A. Institut de Recherches Servier, 22, rue Garnier, F-92200 Neuilly, France **/Amineptine: clinical review./** L'amineptine: synthese des travaux cliniques. Encephale. 5(5, Suppl.):721-735, 1979.

Information on the activity and use of amineptine in the treatment of depression is presented. Amineptine, a new compound derived from the tricyclic antidepressants, is principally dopaminergic and to a lesser extent serotoninergic. Treatment trials have involved monopolar and bipolar, involutional, and neurotic and reactive depression, and chronic schizophrenia. The spectrum of activating antidepressant therapeutic activity of this drug is considered, as are other areas in which amineptine has seemed effective in children and adults. General, cardiac and ocular acceptability in the elderly is noted, as is overdosage. 38 references. (Journal abstract modified)

001897 no author. no address **Two new drugs may pick up where L-dopa leaves off.** Medical World News. 21(10):37-38, 1980.

The effectiveness of two new long-acting drugs for patients with Parkinson's disease is reported. Pergolide, a synthetic ergot derivative and lisuride, a semisynthetic ergot derivative, had the most marked effect on patients with on-off phenomena, the diurnal oscillations in performance with sudden immobility that characterize the wandering response to L-dopa therapy. It is concluded that additional studies are needed to determine whether efficacy and safety are long-term.

001898 Poignant, J. C. I.R.S., 3, avenue de la Republique, F-92150 Suresnes, France **/Amineptine, a new antidepressant: pharmacological review./** Revue pharmacologique sur l'amineptine. Encephale. 5(5, Suppl.):709-720, 1979.

The pharmacology of amineptine, a new antidepressant, is reviewed. Amineptine is a tricyclic derivative with a 7-carbon chain of amino acids. Chemical alterations of the amino acid chain have revealed its importance in shaping of the pharmacological effects. The drug is rapidly absorbed and is metabolized principally by beta-hydroxylation of the chain. A pharmacological profile at different doses is presented. The profile suggests an effect of amineptine on certain dopamine structures. At synapse, neurobiochemistry confirms a mechanism of inhibition of DA incorporation and inhibition of uptake and/or release of 5HT. Amineptine is virtually devoid of peripheral activity, particularly anticholinergic activity. It is suggested that amineptine may be indicated for the treatment of depression where retardation is dominant. 8 references. (Journal abstract modified)

001899 Prud'homme, Bernard. Centre Hospitalier Specialise, Saint-Ave, F-56000 Vannes, France **/Clinical evaluation of the effects of minaprine./** Essai d'appreciation clinique des effets de la minaprine. Psychologie Medicale. 12(B):51-55, 1980.

The effects of minaprine were studied on 26 hospitalized patients or outpatients 17 to 74 years old, who were suffering from neuroses (17 patients) or psychoses (9 patients). It was found that good or very good results were obtained in 46% of the cases. The results were slightly different for various clinical categories of the patients. For example, in six cases of psychoses with externalized delirium, clearly positive results were obtained in four cases (66%). It is concluded that in cases of neurotic disorders, subjects with a relatively well-structured personality

have better chances of improving by taking minaprine than those suffering from anxiety neuroses and conversion hysteria. A brief discussion with B. Prud'homme follows the text of the article.

001900 Robert, Guy. Hopital Psychiatrique, Plouguernevel, F-22110 Rostronen, France /**An attempt at a clinical evaluation of minaprine.**/ Tentative d'orientation clinique de la minaprine. Psychologie Medicale. 12(B):97-101, 1980.

The use of minaprine (brand name Cantor) for psychiatric treatment of patients suffering from depressions, neuroses, and sexual disorders was studied. The subjects were 23 females and 17 males 20 to 75 years old, most adults of middle age. Eleven of them were hospitalized at least 1 month and 29 were outpatients. Positive results were obtained in 75% of the cases and negative results in 25% of them. It was found that minaprine did not have any anxiolytic effect; it does not reactivate anxiety and is not a stimulant. When given 150mg of minaprine, a female patient suffering from paranoia (with intensive persecution delirium) became calmer and her aggressiveness was reduced greatly. It is concluded that minaprine is active in cases of depressions, neuroses, intellectual slowdown, sexual disorders, (but particularly in depressions and neuroses). Minaprine has an average effect on sexual disorders, is not considered as a corrective for impotence or iatrogenic frigidity. It can be used in the given cases in doses of 50 to 300mg, with a remarkable degree of tolerance. 2 references.

001901 Robert, Guy. Hopital Psychiatrique, Plouguernevel, F-22110 Rostronen, France /**An attempt to make a clinical evaluation of minaprine, (continuation of the study).**/ Tentative d'orientation clinique de la minaprine, (poursuite de l'etude). Psychologie Medicale. 12(B):103-110, 1980.

A previous study of the use of minaprine in the treatment of 40 patients suffering from depressions, neuroses, and sexual disorders was continued on 15 patients for an additional 6 to 12 months. The number of the patients was limited to 15 because of a temporary shortage of the drug. Also, 11 patients did not need further treatment. Nineteen additional new patients were examined. It was found that minaprine is a psychotropic stimulant with special characteristics, most suitable for treatment of neurotic depressions. It had good effects on euphoria, on the quality of communications with others, and on asthenia. Poor results were obtained in cases of sexual disorders. The tolerance of the drug was excellent in all cases. It is concluded that the effects on sexual disorders should not be neglected, because there are not other remedies available in that area. The corrective effect on the depression indifference syndrome of neuroleptics in cases of schizophrenia is quite interesting. A brief discussion with G. Robert follows the text of the article. 1 reference.

001902 Romain, Michel; Chevaux, D.; Fraud, J.P.; Patay, Max; Treisser, C.; Werquin, G. Laboratoires CLIN-MIDY, 20, rue des Fosses-Saint-Jacques, F-75240 Paris Cedex 05, France /**Minaprine chlorohydrate: survey of the first clinical studies of the fourth stage.**/ Chlorhydrate de minaprine: bilan des premiers travaux cliniques de phase IV. Psychologie Medicale. 12(B):35-41, 1980.

A total of 843 clinical observations of the effects of minaprine chlorohydrate, sold in France under the brand name of Cantor, were studied and analyzed. The observations, conducted from January 1977 to September 1978 in 75 specialized hospital services, were designed to elaborate on the instructions of the use of the drug, the conditions of its utilization, and the tolerance. Most of the studies continued up to the present. The results are tabulated and cover: the subject's age and sex; the doses, duration of treatment, and the symptoms; the overall results according to type of psychosis, neurosis, or other disorders; tolerance; and EEF findings. The results are generally favorable, and the tolerance of minaprine was found to be particularly good.

001903 Simeon, J. Dept. of Psychiatry, School of Medicine, University of Ottawa, Royal Ottawa Hospital, 1145 Carling Avenue, Ottawa, Ontario, Canada **Classification of psychotropic drugs in paediatric psychopharmacology.** Progress in Neuro-Psychopharmacology. 4(4/5):519, 1980.

It is argued that classification schemes for psychoactive drugs which are based on clinical responses to drugs are inappropriate because they are based upon the reactions to them by adults, and have little relationship to the clinical responses of children and geriatric groups to the same drugs. The use of such descriptive labels as psychostimulant, antidepressant, antipsychotic, and antianxiety are discussed with reference to pediatric pharmacology. Children differ from adults not only in their behavioral response to psychoactive drugs, but also in relation to adverse effects, neurophysiological and developmental response. It is concluded that a broader view of drug action in the pediatric, adult, and geriatric populations will result in a more meaningful classification of psychotropic drugs.

001904 Singer, L.; Krieger-Finance, F.; Danion, J.-M. CHU de Strasbourg, F-67091 Strasbourg Cedex, France /**Clinical activity of a new benzodiazepine: cloxazolam.**/ Activite clinique d'une nouvelle benzodiazepine: le cloxazolam. Annales Medico-Psychologiques. 138(1):95-103, 1980.

The use of cloxazolam in the treatment of psychosis and neurosis was studied. An average dose of 3mg daily in three doses was administered to 24 hospitalized subjects demonstrating neurotic or psychotic disturbances. The efficacy of the drug was evaluated using the Hamilton Anxiety Scale at various times during the experiment. Results indicate that a majority of the subjects demonstrated improvement especially of anxiety levels and of associated somatic symptoms. The tolerance was good and the drug was beneficial to subjects of all ages. Contraindications were not in evidence. A discussion follows the main text. 4 references. (Author abstract modified)

08 DRUG TRIALS IN SCHIZOPHRENIA

001905 Alfredsson, G.; Nyback, H.; Sedvall, G.; Wode-Helgodt, B. Laboratory of Experimental Psychiatry, Dept. of Psychiatry, Karolinska Institutet, S-104 01 Stockholm, Sweden **Relationships between chlorpromazine concentrations in plasma and cerebrospinal fluid and clinical and biochemical responses in psychotic patients.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 943-948).

Psychotic patients with a schizophrenic symptomatology were treated with 200, 400, or 600mg of chlorpromazine (CPZ) per day for 4 weeks. Levels of CPZ and prolactin PRL were determined in plasma and cerebrospinal fluid (CSF) at 2 and 4 weeks. CSF levels of homovanillic acid (HVA) were also measured and psychopathological ratings were made using the comprehensive psychopathological rating scale. Correlations between the different variables showed a close relationship between plasma levels of PRL and CPZ. The increase in CSF HVA level, as well as clinical improvement at 2 weeks, were not correlated to CPZ dosage but correlated positively to plasma and CSF CPZ levels. These correlations, however, were not present at 4 weeks of treatment, indicating that following an initial influence on dopamine (DA) receptors, other neuron systems are involved in maintaining improvement in the pharmacotherapy of psychoses. 8 references. (Author abstract modified)

001906 Angrist, B.; Rotrosen, J.; Gershon, S. Dept. of Psychiatry, New York University Medical Center, 550 First Avenue, New York, NY 10016 **Differential effects of amphetamine and neuroleptics on negative vs. positive symptoms in schizophrenia.** Psychopharmacology. 72(1):17-19, 1980.

Positive symptoms of schizophrenia among a group of 21 schizophrenic patients were found to diminish in response to neuroleptics and to increase in response to amphetamine. These changes in positive symptoms accounted for most of the change seen in the total Brief Psychiatric Rating Scale (BPRS). Negative symptoms in the same Ss were not affected by neuroleptics but increased after amphetamines to a degree that just attained statistical significance. This increase was due to one item (emotional withdrawal) of the negative symptom factor which responded to neuroleptics and amphetamines as did positive symptoms. These findings are discussed with respect to new ideas about the role of dopamine in schizophrenia. 11 references. (Author abstract modified)

001907 Bartholini, G.; Cuche, H.; Zarifian, E.; Morselli, P. L. Research Dept., Synthelabo-L.E.R.S., 58 rue de la Glaciere, F-75013 Paris, France **Involvement of cholinergic and GABA-ergic systems in schizophrenia.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 439-444).

Animal research which indicates that cholinergic and GABA-ergic systems modulate the activity of dopamine neurons is reviewed, and the implications for the role of these neurons and their involvement in pathological states such as schizophrenia are examined. This research demonstrates that in both extrapyramidal and limbic regions, a cholinergic mechanism facilitates dopaminergic transmission, whereas GABA neurons inhibit dopamine activity. As limbic dopamine seems involved in the pathogenesis of schizophrenia, it is suggested that blockade of cholinergic or activation of GABA-ergic transmission should improve this condition. However, few and contradictory clinical data are available on the effect of drugs which alter cholinergic or GABA-ergic mechanisms. The results of a pilot clinical trial with SL 76 02, a new GABA receptor stimulant, suggest that GABA-ergic medication does not modify psychotic symptoms. 25 references. (Author abstract modified)

001908 Bastecky, J.; Halkova, E.; Kalvach, Z. Psychiatricka Katedra ILF, 181 02 Prague 8-Bohnice, Czechoslovakia **Long-term application of high doses of clorotepine to chronic schizophrenic patients.** Activitas Nervosa Superior. 22(3):153-154, 1980.

The effects of long-term, high dose clorotepine therapy for chronic schizophrenic patients were investigated. Ten schizophrenic inpatients received clorotepine in a daily dose of 105 to 210mg for between 6 and 78 weeks. Psychopathology was assessed at the beginning of the study, every 6 weeks of treatment, and at termination, using the rating scale BPRS. Side-effects were monitored, using the scale DVP. Physiological functioning was assessed at the beginning and the end of the trial. In seven of 10 patients, a striking improvement in psychopathology was noted. No serious side-effects or pathological changes were found. 2 references.

001909 Beckmann, Helmut; Haas, Steffen. Zentralinstitut fur Seelische Gesundheit, J5, D-6800 Mannheim, West Germany **High dose diazepam in schizophrenia.** Psycholpharmacology. 71(1):79-82, 1980.

The utility of high dose diazepam in treatment of schizophrenia was reevaluated. Treatment of 15 schizophrenic patients with doses of up to 400mg/day showed a specific effect on hallucinations and certain forms of delusion. One group (nine patients with paranoid/hallucinatory and one with schizoaffective psychosis) showed a significant reduction in psychopathology as documented in the Brief Psychiatric Rating Scale (BPRS) and the Global Clinical Impressions (GCI), whereas five other patients (all of the schizoaffective type with symptoms of depression, euphoria, and/or psychotic anxiety) did not respond and had to be withdrawn from the study. Under the treatment an absence of sedative effects and a development of the feeling of well-being and euphoria were noticed. In three patients with doses of over 260mg/day, a marked loss of inhibitions in sexual and social behavior was observed. It is concluded that high doses of diazepam may be useful in certain types of schizophrenia. 17 references. (Author abstract modified)

001910 Buchsbaum, M. S.; Davis, G. C.; van Kammen, D. P. Biological Psychiatry Branch, NIMH, Bldg. 10, 2N218, Bethesda, MD 20205 **Diagnostic classification and the endorphin hypothesis of schizophrenia: individual differences and psychopharmacological strategies. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 29 p.

The endorphin hypothesis of schizophrenia is discussed; evidence linking the endorphin system to schizophrenia is reviewed; the immense variability in schizophrenia patients is evaluated; and strategies for psychopharmacological intervention and for approaching biological heterogeneity in the schizophrenia syndrome are discussed. Direct evidence for the endorphin hypothesis in schizophrenia is reviewed, and it is suggested that indirect evidence for a role of endorphins in schizophrenia could be obtained by the measurement of pain sensation with psychophysical, psychophysiological, and behavioral tests. Pain sensitivity, electrophysiological measures of sensory sensitivity, opiate antagonists and EP amplitude, specificity of pain insensitivity findings for schizophrenia, and premature rejection of new hypotheses of schizophrenia are discussed. Strategies aimed at identifying subgroups who are presumptive candidates for hyperendorphinism and a potential target population for trials of opiate antagonists and studies of endorphinergic mechanisms are discussed. 58 references.

001911 Crow, T. J.; Cross, A. J.; Johnstone, E. C.; Longden, A.; Owen, F.; Ridley, R. M. Division of Psychiatry, Clinical Research Centre, Northwick Park Hospital, Harrow, Middlesex, England **Time course of the antipsychotic effect in schizophrenia and some changes in postmortem brain and their relation to neuroleptic medication.** Advances in Biochemical Psychopharmacology. 24:495-503, 1980.

The time course of the antipsychotic effect of neuroleptic drugs in schizophrenia and some changes in postmortem brain and their relation to neuroleptic medication are described. The time course of the antipsychotic effect in acute schizophrenia is slow, and is delayed by at least 2 weeks by comparison with the dopamine receptor blockade induced by neuroleptic drugs. Although some actions of haloperidol on amphetamine-induced abnormal behaviors in the marmoset have a slow time course, a satisfactory animal model of the time course of the antipsychotic effect in man has not yet been developed. Dopamine, homovanillic acid, and dihydroxyphenylacetic acid concentration are not systematically changed in schizophrenic patients by comparison with controls, and are apparently unrelated to neuroleptic medication at the time of death. Spiroperidol binding was found to be significantly increased in the brains of two thirds of schizophrenic patients. 14 references.

001912 David, I. Psychiatric Research Unit, Ke Karlovu 11, 128 21 Prague 2, Czechoslovakia **Disorders of smooth pursuit eye movements in schizophrenics and the effect of neuroleptics in therapeutic doses.** Activitas Nervosa Superior. 22(3):155-156, 1980.

The effects of neuroleptics on disorders of smooth pursuit eye movements (SPEMs) among schizophrenic patients were investigated. SPEMs were investigated in 26 hospitalized schizophrenics and in 23 staff members. Significant differences in SPEMs of patients and control Ss were found for: small saccades, positive saccades, and overshooting and undershooting. Among the schizophrenic patients, none of the SPEM parameters was found to be significantly correlated with the daily dose of neuroleptics. 9 references.

001913 Dysken, Maurice W.; Chang, Sidney S.; Schaffer, Charles; Casper, Regina C.; Javaid, Javaid I.; Davis, John M. Illinois State Psychiatric Institute, Chicago, IL 60612 **Plasma levels and therapeutic efficacy of fluphenazine hydrochloride and decanoate.** Advances in Biochemical Psychopharmacology. 24:581-583, 1980.

The relationship between plasma levels and therapuetic efficacy of fluphenazine hydrochloride and fluphenazine decanoate was investigated in 29 patients meeting research diagnostic criteria for either schizophrenia or schizoaffective disorder. Plasma levels were assessed for both single dose and steady-state pharmacokinetic parameters. Clinical response as a function of mean steady-state fluphenazine levels suggested an upper end of the therapeutic window in three patients who responded poorly with mean steady-state values above 2.5ng/ml. Twenty-four hour plasma drug levels following standard doses of fluphenazine decanoate were less than 1.0ng/ml. Plasma levels fell rapidly to undetectable levels within 2 to 6 days following injection of the decanoate form of fluphenazine. 5 references.

001914 Edwards, J. Guy; Alexander, John R.; Alexander, M. S.; Gordon, Alan; Zutchi, T. Dept. of Psychiatry, Royal South Hants Hospital, Southampton S09 4PE, England **Controlled trial of sulpiride in chronic schizophrenic patients.** British Journal of Psychiatry. 137(December):522-529, 1980.

In a double-blind comparative trial of sulpiride (600-1800 mg/day) and trifluoperazine (15-45 mg/day) in 38 chronic schizophrenic patients, ratings of therapeutic results and unwanted effects were made at 2 weekly interviews during the 6-week treatment period. The results show that sulpiride has neuroleptic properties and a spectrum of therapeutic activity similar to that of trifluoperazine. There was an association between plasma sulpiride levels and therapeutic response after 4 weeks of treatment. 31 references. (Author abstract)

001915 Elizur, A.; Segal, Z.; Yeret, A.; Davidson, S.; Atsmon, A. Shalvata Psychiatric Center, POB 94, Hod Hasharon, Israel **Antipsychotic effect of propranolol on chronic schizophrenics: study of a gradual treatment regimen.** Psychopharmacology. 60(2):189-194, 1979.

Ten chronic treatment resistant schizophrenic patients were treated in a single-blind trial for 6 weeks with propranolol in daily doses increasing up to 3g, to evaluate a modified dose regimen of propranolol treatment in these patients. Four of the patients improved significantly and could be released from the hospital, regaining premorbid social and work adjustments. The modified regimen proved safe as long as the dose increment was not more than 80mg/day. The mean therapeutic level of propranolol was 1600mg/day, which proved to be a safe dose. Although three patients with hypertensive encephalopathy responded, their response was related not to the maximum dose but to a drastic change in the rate of the dose increase. It seems that on the basis of these results a double-blind comparative study would be worthwhile. 10 references. (Author abstract modified)

001916 Elizur, A.; Segal, Z.; Yeret, A.; Ben-David, M. Sackler School of Medicine, Tel Aviv University, P.O.B. 94, Hod Hasharon, Israel **Effect of propranolol treatment on serum prolactin level in schizophrenic patients.** Communications in Psychopharmacology. 4(3):203-206, 1980.

Serum prolactin levels (SPL) were measured in 16 chronic schizophrenics treated with propranolol (up to 3g), haloperidol (up to 80mg), or a combination of the two drugs. SPL did not differ from pretreatment levels during propranolol administration, but showed a dose-dependent increase during treatment wit haloperidol alone or combined with propranolol. No consistent correlation between SPL and clinical ratings was found. 12 references. (Author abstract modified)

001917 Emrich, H. M.; Moller, H.-J.; Laspe, H.; Meisel-Kosik, I.; Dwinger, H.; Oechsner, R.; Kissling, W.; von Zerssen, D. Max-Planck-Institut fur Psychiatrie, Kraepelinstr. 10, D-8000 Munchen 40, West Germany **On a possible role of endorphins in psychiatric disorders -- actions of naloxone in psychiatric patients.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 798-805).

Current research on the possible role of endorphins in psychiatric disorders is reviewed, with an emphasis on observations of the action of naloxone in schizophrenic patients. This research applied the specific opiate antagonist, naloxone, in psychotic patients, and evaluated the psychopathological changes after blockade of opiate receptors induced by this drug. In a double-blind placebo controlled cross-over designed study, 20 schizophrenic patients received 4.0mg doses of naloxone, and 20 schizophrenic patients received naxolone doses of 24.8mg. Beta-endorphin has also been applied to psychiatric patients and its therapeutic effects were evaluated. In addition, the actual level of the different types of endorphins in the plasma and cerebrospinal fluid of psychiatric patients in different states of psychopathology was determined. The results are at variance with the assumption that endorphins play a central role in the pathogenesis of schizophrenia. 28 references.

001918 Emrich, H. M.; Zaudig, M.; v. Zerssen, D.; Herz, A.; Kissling, W. Max Planck Institut fur Psychiatrie, Kraepelinstrasse 10, D-8000 Munich 40, West Germany **Des-Tyr1-gamma-endorphin in schizophrenia.** Lancet. No. 8208/9:1364-1365, 1980.

Possible antipsychotic effects of gamma-type endorphins (des-Tyr1-gamma-endorphin) were studied through a double-blind placebo controlled cross-over study of 13 schizophrenic patients undergoing continuous neuroleptic therapy. Based on assessment with the Inpatient Multidimensional Psychiatric Scale and the Verlaufs-Beurteilungs-Skala, it is concluded that the gamma-type endorphin does not have antipsychotic action in chronic schizophrenia, but it may have an effect in acute cases. 7 references.

001919 Frohman, Charles E. Lafayette Clinic, Detroit, MI **A tripeptide for control of schizophrenia symptoms.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 402-405).

The safety of a tripeptide, threonylvalylleucine, as a treatment for schizophrenia was investigated and the results on its biological activity are reported. Experiments with rats and beagles injected with a derivative, N-acetyl-threonylvalylleucine, were conducted. The results showed a powerful effect on corticol hormones, possibly as a result of a preliminary effect of ACTH, and it is suggested that N-acetyl-threonylleucine is a hypothalamyl polypeptide which inhibits the release of ACTH by the pituitary. An increase in MAO activity was noted, which may have implications for the effective treatment of schizophrenia. 9 references.

001920 Guilmot, Pierre Herbert; Stein, Frederic; Colinet, Andre; Goffaux, Paul; Even, Paul; Lenelle, Jules; Meert, Christian. U.C.L., Louvain-en-Woluwe, Institut Psychiatrique de Beau Vallon, Namur, Belgium /Sultopride (Barnetil)./ Le sultopride (Barnetil). Psychologie Medicale. 12(12):2599-2603, 1980.

Sultopride's use in the treatment of psychotic patients is discussed. Sultopride (Barnetil C), a neuroleptic of the anisamide group of compounds, is a highly effective antipsychotic agent, especially for the treatment of acute psychoses such as mania and acute schizoaffective psychosis. Low doses also give relatively good results in chronic paranoid, withdrawn schizophrenic patients. Neurologic and electrogenic tolerance is good. The only contraindication is anxious agitation in depressed and neurotic patients. 43 references. (Journal abstract modified)

001921 Hirsch, Steven R.; Manchanda, Rahul; Weller, Malcolm P. I. Dept. of Psychiatry, Charing Cross Hospital Medical School, University of London, Fulham Palace Road, London W6 8RF, England **Dextro-propranolol in schizophrenia.** Progress in Neuro-Psychopharmacology. 4(6):633-637, 1980.

Seven of nine schizophrenic patients treated with d-propranolol in an uncontrolled trial showed significant improvement on the schizophrenia subscale of the Brief Psychiatric Rating Scale. The mean dose was 1,329mg/day and the mean duration of treatment was 3.1 weeks. Adverse side-effects were seen in two patients, but no patient showed extrapyramidal side-effects. 20 references. (Author abstract modified)

001922 Imlah, Norman W. All Saints' Hospital, Birmingham, England **Long term effects of pipothiazine palmitate.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/ North Holland, 1979. 835 p. (p. 1081-1086).

The long-term effects of pipothiazine palmitate on 15 schizophrenic patients were investigated. The therapeutic results were particularly impressive since many of the Ss had a poor prognosis prior to treatment. There was an absence of schizophrenic symptoms in half of them at several followup ratings, including a 5-year evaluation. No serious side-effects were noted, and patients were satisfactorily maintained at a lower level than that suggested in most short-term studies. In common with the 5-year followup of fluphenazine decanoate, there appear to be no unforeseen or undue hazards in patients on long-term maintenance with depot neuroleptics in moderate dosages (up to 100mg per injection). 2 references.

001923 Johnstone, Eve C.; Crow, T. J.; Cotes, P. Mary. Division of Psychiatry, Clinical Research Centre, Watford Rd., Harrow, HA1 3UJ, Middlesex, England **Hormone levels in acute schizophrenia with and without neuroleptic medication.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/ North Holland, 1979. 817 p. (p. 476-481).

Anterior pituitary hormones and testosterone were measured before and at weekly intervals during a 4-week trial of alpha-flupentixol, beta-flupentixol, and placebo in patients with acute schizophrenia. Prolactin levels rose substantially in patients receiving alpha-flupentixol, but there were few changes in the other two groups. Levels of the other hormones did not change significantly over the 4 weeks. Of the hormones studied, changes in serum prolactin were the only ones significantly related to the antipsychotic effect. There was a temporal dissociation between rise in prolactin level and antipsychotic effect. Implications of these findings for the role of dopamine receptor blockade and the central monoaminergic systems in the antipsychotic effect are discussed. 9 references. (Author abstract modified)

001924 Kabes, J.; Balon, R.; Papezova, H. Institute of Psychiatry, 181 3 Prague, Czechoslovakia **Maintenance therapy with fluphenazine decanoate and oxyprothepine decanoate in schizophrenic patients -- a double blind cross-over comparative study.** Activitas Nervosa Superior. 22(3):160-162, 1980.

A double-blind, cross over study of maintenance therapy of schizophrenic patients with fluphenanzine decanoate and oxyprothepine decanoate is described. Forty-six schizophrenic patients matched for sex, age, clinical diagnosis, illness duration, total period of hospitalization, and pretrial therapy received each drug for 6 months. Oxyprothepine decanoate was found at least as effective as fluphenazine decanoate and induced relatively fewer side-effects. Complete clinical examinations and ECG and EEG recordings were administered at the beginning of the trial and at regular intervals throughout. 10 references.

001925 Kalvach, Z.; Halkova, E.; Bastecky, J.; Dusek, K.; Baborova, E. Dept. of Psychiatry, Postgraduate Medical Institute, 181 02 Prague 8, Czechoslovakia **Experience with oxyprothepine-decanoate in the maintenance therapy of schizophrenia.** Activitas Nervosa Superior. 22(3):159, 1980.

An open clinical trial of oxyprothepine decanoate for the maintenance therapy of 19 schizophrenic patients whose symptoms were in remission is described. Patients' states were assessed with the rating scales BPRS, DVP, and CGI (clinical general impression) before the treatment and at each injection. Before patients were transferred from other neuroleptics and in the third and sixth months of oxyprothepine decanoate treatment, physiological function was assessed. Clinical state deteriorated in four patients and remained stable in 15 patients. The incidence of side-effects did not differ from treatment with other neuroleptics. 1 reference.

001926 King, D. J.; Turkson, S. N. A.; Liddle, J.; Kinney, C. D. Dept. of Therapeutics and Pharmacology, Queen's University of Belfast, Belfast, Northern Ireland **Some clinical and metabolic aspects of propranolol in chronic schizophrenia.** British Journal of Psychiatry. 137(November):458-468, 1980.

Evidence is presented that no benefit was attributable to propranolol (1000mg/day) in a trial lasting at least 22 weeks, 6 weeks of which was double-blind placebo-controlled in five chronic schizophrenic patients. The mean propranolol CSF/ plasma ratio was 0.08, and there was good agreement between CSF and free plasma propranolol levels. Basal plasma prolactin was slightly but insignificantly reduced by propranolol, and metoclopramide stimulated prolactin release was unaffected. Propranolol was associated with a significant temporary increase in HVA, a nonsignificant rise in 5-HIAA, and a significant decrease in MHPG, in the lumbar cerebrospinal fluid of four patients. 33 references. (Author abstract modified)

001927 Kleine, T. O.; Kroh, U. Klinisch-chemisches Labor, Universitats-Nervenklinik, Marburg/Lahn, West Germany **Effect of fluphenazine on the circadian excretion of cyclic nucleotides and electrolytes in the urine of chronic schizophrenics.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 317-322).

The circadian excretion of cyclic AMP and cyclic GMP, together with electrolytes, was determined in the urine of five healthy normal men and two chronically diseased male schizophrenics to assess the effect of fluphenazine on these parameters. Excretion was altered in the urine of the two patients, and these results suggest disturbances in the interior body time of schizophrenics. Fluphenazine further affected the circadian excretion pattern of cyclic AMP and cyclic GMP in both patients and, to a smaller extent, that of electrolytes. 5 references. (Author abstract modified)

001928 Kleinman, J. E.; Weinberger, D. R.; Rogol, A.; Bigelow, L. B.; Karson, C.; Freed, W.; Potkin, S.; Bridge, T. P.; Wise, C. D. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Cerebral ventricles and dopamine in schizophrenia. (Unpublished paper).** Washington, DC, NIMH, 1980. 2 p.

Two relationships thought to involve dopaminergic activity were studied in chronic schizophrenics with large and normal cerebral ventricular/brain ratios (VBR). The first involved the relationship of psychopathology to plasma prolactin (PRL) concentrations; the second examined the correlation of eyeblink rates to platelet monamine oxidase (MAO) activity, a relationship which may involve central dopaminergic activity. Increased dopaminergic activity (low plasma PRL) is associated with increased psychopathology in normal VBR chronic schizophrenics, but less clearly, if at all, in large VBR patients. Similarly, increased blinking is related to low platelet MAO in normal VBR chronic schizophrenics, but not large VBR subjects. These data support the notion that VBR is a relevant factor in subtyping chronic schizophrenics and that increased dopaminergic activity may contribute to psychopathology in those patients with normal VBR. 8 references. (Author abstract modified)

001929 Lapierre, Y. D.; Berliss, H.; Monpremier, P.; Elie, R. Dept. of Psychiatry and Pharmacology, University of Ottawa, 197 Cumberland St., Ottawa, Ontario, Canada **Methodology and results of a long-term study of long-acting neuroleptics: pipothiazine palmitate and fluphenazine decanoate.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1087-1094).

Fluphenazine decanoate and pipothiazine palmitate were compared as administered parenterally at 4-week intervals in the prophylactic treatment of 43 chronic ambulatory schizophrenics over a period of 1 year. Dosage requirements of pipothiazine palmitate were slightly greater than those of fluphenazine decanoate in a ration of 4:3. The overall efficacy index was slightly higher for pipothiazine palmitate than for fluphenazine decanoate. Sex and drug interactions were common, suggesting some instances of superior efficacy for one drug or the other at different items of the Brief Psychiatric Rating Scale. These sex and drug interactions suggest that pipothiazine palmitate may produce better results in males and that fluphenazine decanoate may be more beneficial to females. 5 references. (Author abstract modified)

001930 Lechin, Fuad; Van Der Dijs, Bertha; Gomez, Francisco; Valls, Jose Manuel; Acosta, Emilio; Arocha, Luis. Apartado 80.983 Caracas 108, Venezuela **Pharmacomanometric studies of colonic motility as a guide to the chemotherapy of schizophrenia.** Journal of Clinical Pharmacology. 20(11-12):664-671, 1980.

Distal colon motility studies in 41 psychotic patients revealed noradrenergic hyperactivity in 32 and dopaminergic hyperactivity in 9. The noradrenergic hyperactive patients were diagnosed as schizophrenics, whereas the dopaminergic hyperactive patients had schizoaffective disorders. The schizophrenic group was successfully treated with clonidine and schizoaffective patients were successfully treated with clonazepam. Adjunctive therapy with sulpiride and phentolamine led to further improvements. 20 references.

001931 Levine, Jerome; Schooler, Nina R.; Severe, Joanne; Escobar, Javier; Gelenberg, Alan; Mandel, Michel; Sovner, Robert; Steinbook, Richard. Psychopharmacology Research Branch, NIMH, Rockville, MD 20857 **Discontinuation of oral and depot fluphenazine in schizophrenic patients after one year of continuous medication: a controlled study.** Advances in Biochemical Psychopharmacology. 24:483-493, 1980.

A controlled study of discontinuation of oral and depot fluphenazine in schizophrenic patients after one year of continuous medication is described. Data on the issues of relapse, the occurrence of abnormal involuntary movements (tardive dyskinesias), and their relationship to each other are presented. Results of this multicenter trial are only partially consistent with the dopamine blockade theory of neuroleptic drug action. Although, as predicted, increases in both relapse and occurrence of abnormal involuntary movements are observed, no relationship between these phenomena within individuals was observed. Results with oral medication were more clear-cut than those in the depot discontinuation group, and indicate that discontinuation of fluphenazine therapy in schizophrenic patients after 1 year is more likely to lead to relapse than if the medication is continued for an additional 15-week period. 9 references.

001932 McCreadie, R. G.; Dingwall, J. M.; Wiles, D. H.; Heykants, J. J. P. Crichton Royal Hospital, Dumfries, DG1 4TG, Scotland **Intermittent pimozide versus fluphenazine decanoate as maintenance therapy in chronic schizophrenia.** British Journal of Psychiatry. 137(December):510-517, 1980.

In a double-blind trial, 34 male chronic schizophrenic day patients or inpatients in a hostel ward continued on fluphenazine decanoate given once fortnightly or were switched to pimozide given 4 days per week. Over 9 months, relapse rates were similar for both groups. While fewer patients on pimizode were prescribed antiparkinsonian drugs, 25% developed buccolingual-masticatory dyskinesia. Plasma pimozide levels suggested satisfactory drug compliance. Average plasma prolactin levels were within the normal range for untreated men in 25% of nonrelapsing patients on pimozide and 75% of those on fluphenazine. 28 references. (Author abstract modified)

001933 McGuffin, Peter. Maudsley Hospital, Denmark Hill, London SE5, England **The HLA system and schizophrenia in England.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 85-89).

Data on the distribution of HLA antigen frequencies in British schizophrenic patients are discussed and results are reported from a study of the effects of neuroleptics on a subsample of these Ss. A group of 80 patients were HLA typed for 25 A-series and B-series antigens, and it was concluded that a reported association of HLA A28 is of dubious importance. More promising results were obtained, however, for the relationship between HLA and diagnostic subtypes. Findings on the effect of neuroleptics on 28 of the Ss suggested a susceptibility to drug-induced parkinsonism and supported the hypothesis that HLA antigens may influence responsiveness of cell surface receptors to certain ligands (in this case, dopamine blocking drugs). 20 references.

001934 Molcan, J.; Caplova, T.; Okruhlica, L.; Streckc, A.; Nabelek, L. Psychiatric Clinic, Mickiewiczova 13, 884 21 Bratislava, Czechoslovakia **Oxyprothepine decanoate compared with fluphenazine decanoate in the treatment of schizophrenia: preliminary communication.** Activitas Nervosa Superior. 22(3):160, 1980.

The clinical efficacy of oxyprothepine decanoate and fluphenazine decanoate in the treatment of schizophrenia was assessed in 12 men and eight women. The clinical state and side-effects were evaluated before treatment, before each injection, and following 6 months treatment using the ratings scales BPRS, CGI, and DVP. Both drugs significantly reduced psychotic symptomatology. Fluphenazine showed a greater tendency to produce extrapyramidal side-effects. In nine patients receiving fluphena-

zine it was necessary to apply antiparkinsonism drugs; among oxyprothepine patients only three required antiparkinsonism drugs. 4 references.

001935 Naber, D.; Ackenheil, M.; Laakmann, G.; Fischer, H.; von Werder, K. Psychiatr. Klinik der Universitat, Nussbaumstrasse 7, D-8000 Munich 2, West Germany **Basal and stimulated levels of prolactin, TSH and LH in serum of chronic schizophrenic patients, long-term treated with neuroleptics.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(6):325-330, 1980.

Basal and stimulated (0.2mg TRH, 0.025mg LHRH) levels of prolactin, TSH, and LH were measured in serum of 12 male and 10 female chronic schizophrenic patients, who were hospitalized and had been treated with neuroleptics from 6 to 21 years. The mean values of the three pituitary hormones were within the normal range in both sexes. Tolerance to the prolactin increasing effect of neuroleptics apparently develops after long-term neuroleptic treatment. TSH and LH secretions are not markedly impaired by chronic neuroleptic treatment. 36 references. (Journal abstract modified)

001936 Naber, Dieter; Ackenheil, Manfred; Laakmann, Gregor. Psychiatric Clinic, University of Munich, Munich, West Germany **Basal and stimulated levels of prolactin, TSH, and LH in serum of chronic schizophrenic patients long-term treated with neuroleptics: relations to psychopathology.** Advances in Biochemical Psychopharmacology. 24:419-423, 1980.

The effects of long-term neuroleptic therapy on serum prolactin (PRL), thyrotropin (TSH),and luteinizing hormone (LH) were investigated in chronic schizophrenic patients. Secretory reserves were investigated by measuring serum levels after stimulation with thyrotropin releasing hormone and LH releasing hormone. Moreover patients' psychotic syndromes were rated to examine if there are any significant relationships between psychopathology and serum levels of the three measured hormones. Mean basal and stimulated hormone responses of the 22 chronic schizophrenic patients (treated with neuroleptics for 6 to 21 years) were within the normal range. Tolerance to the PRL increasing effect appears to be developed after long-term neuroleptic treatment; TSH and LH secretion are not markedly impaired. The severity of psychopathology failed to correlate with serum levels of PRL, TSH, or LH. 25 references. (Author abstract modified)

001937 Nahunek, K.; Svestka, J.; Ceskova, E. Psychiatric Clinic UJEP, Jihlavska 10, 657 15 Brno, Bohunice, Czechoslovakia **Controlled in schizophrenia: a methodical check of a double-blind cross-over design.** Activita Nervosa Superior. 22(3):154-155, 1980.

To evaluate the possible artifactual effects of a common double-blind, cross-over design, 38 schizophrenic Ss participated in a double-blind, cross-over study in which perphenazine was administered as the active agent in both sections of the cross-over design. The therapeutic effects were quantified by the rating scales FKP and VP at 7-day intervals. At the end of the 3-week trial, a global evaluation according to Serejskij was performed. For all patients, psychopathology was significantly reduced following the second period of pharmacotherapy, indicating high predictive value of the results of 21 days of perphenazine treatment. In 87% of patients a tendency towards relapse was observed in the placebo interval. 1 reference.

001938 Nasrallah, Henry A.; Rivera-Calimlim, Leonor; Wyatt, Richard J. VA Medical Center, University of Iowa College of Medicine, Iowa City, IA 52240 **Low oral CPZ bioavailability in chronic schizophrenia. (Unpublished paper).** Washington, NIMH, 1980. 2 p.

Intrapatient and interpatient kinetics of large oral and i.m. chlorpromazine (CPZ) doses in chronically treated schizophrenic subjects, which suggest that low CPZ plasma concentrations in chronic patients are due to diminished oral bioavailability rather than increased total clearance or increased volume of distribution, are presented. Ten chronic schizophrenic patients, with 3 to 12 years duration of illness, were the subjects. The data suggest that the failure of some chronic psychiatric patients to achieve adequate CPZ levels may be due to poor bioavailability of the oral dose and that such patients may benefit from parenteral dosing in addition to or instead of oral dosing. 3 references. (Author abstract modified)

001939 no author. no address **Propranolol in schizophrenia -- more guess than gauss.** Lancet. No. 8195:627-628, 1980.

Several studies in which propranolol was given to schizophrenic patients are summarized and its effectiveness is discussed. There is some evidence that propranolol may benefit some patients suffering from chronic schizophrenia, in most cases as an addition to phenothiazine treatment. The mode of action of propranolol is unknown except that, as a highly lipophilic beta blocker, it can be presumed to act on central mechanisms. Evidence is cited to indicate that propranolol and phenothiazines compete for the same metabolic pathways. It is concluded that it is unlikely that penothiazines exert their long-term effects on the course of schizophrenia through dopamine blockade. A considerable number of patients are helped only partly or not at all by phenothiazines. It is suggested that propranolol may be useful to certain patients. 11 references.

001940 Peet, M.; Middlemiss, D. N.; Yates, R. A. Clinical Research Dept., I.C.I. Pharmaceuticals Division, Alderley Park, Macclesfield, Cheshire SK10 4TG, England **Pharmacokinetic interaction between propranolol and chlorpromazine in schizophrenic patients.** Lancet. No. 8201:978, 1980.

Antischizophrenic effects of propranolol and interaction between propranolol and chlorpromazine in schizophrenic patients were studied. During one 7-week treatment phase patients were given chlorpromazine alone and during a second 7-week period, propranolol was added. The order of the two treatment phases was randomized. Both the plasma level of chlorpromazine and the total pharmacologically-active compound in the serum were markedly and significantly increased during treatment with propranolol. It is suggested that a definitive conclusion as to whether propranolol has any intrinsic antischizophrenic effect must await the results of controlled trials in which propranolol alone is compared with placebo. It is suggested that a pharmacokinetic interaction must be considered as a likely explanation of any beneficial effect when propranolol is combined with neuroleptics. 8 references.

001941 Phillipson, O. T.; Baker, J.; Williams, M. MRC Neurochemical Pharmacology Unit, Cambridge, England **Change in patients is related to plasma phenothiazine concentration.** Advances in Biochemical Psychopharmacology. 24:591-597, 1980.

The relationship between plasma level of phenothiazines and changes in overinclusive thinking of schizophrenic patients was investigated in six patients experiencing an acute worsening of schizophrenia. Results indicate that the severity of schizophrenic illness is associated with the degree of overinclusive thought, and that improvement in a variety of perceptual disturbances is closely associated with an increase in the plasma concentration of active metabolites of phenothiazines. Results also suggest that dopaminergic mechanisms may play a part in determining the outcome of tests of overinclusive thought disorder, and that this outcome can be influenced by antipsychotic drug treatment. 14 references.

001942 Puech, Alain Jacques; Lecrubier, Yves; Simon, Pierre. Dept. de Pharmacologie, Faculte de Medecine Pitie-Salpetriere, 91, de l'hopital, F-75634 Paris Cedex 13, France /**Neuroleptics and dopamine receptors, therapeutic implications.**/ Neuroleptiques et recepteurs dopaminergiques, implications therapeutiques. Psychologie Medicale. 12(12):2573-2574, 1980.

The effects of neuroleptic drugs on dopamine receptors are discussed. All neuroleptic drugs block dopamine receptors. However, it is thought that some selectively block postsynaptic dopamine receptors and decrease dopamine activity; others selectively block presynaptic dopamine receptors and increase dopamine activity. The former are used in treating the productive symptoms of schizophrenia; the latter are used in treating the defective symptoms of schizophrenia. (Journal abstract modified)

001943 Rama Rao, V. A.; Bishop, Margaret; Coppen, Alec. Coppen: MRC Neuropsychiatry Laboratory, West Park Hospital, Epsom, Surrey KT19 8PB, England **Clinical state, plasma levels of haloperidol and prolactin: a correlation study in chronic schizophrenia.** British Journal of Psychiatry. 137(December):518-521, 1980.

Chronic schizophrenia patients were maintained for 6 months on a dosage of haloperidol adjusted to give optimum clinical effect. A correlation was found between extrapyramidal symptoms and prolactin levels and between plasma haloperidol concentration and plasma prolactin levels. It is concluded that estimation of plasma prolactin is a reliable measurement of patients' compliance with medication. 19 references. (Author abstract modified)

001944 Ringwald, E.; Lustig, A.; Moscovici, M.; Spiegel, R.; Vamos, E. Klinische Forschung, Abteilung Experimentelle Therapie, Sandoz AG, CH-4000 Basel, Switzerland /**Use of large single doses of bromocriptine in schizophrenic patients with elevated serum prolactin levels and extrapyramidal side-effects associated with neuroleptic treatment.**/ Applikation von Bromocriptin in hohen Einzeldosen bei schizophrenen Patienten mit erhohten Prolaktinwerten und neuroleptisch bedingten extrapyramidalen Storungen. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(6):318-324, 1980.

The influence of single 20mg and 30mg doses of bromocriptine on the most common unwanted effects of neuroleptic drugs (elevated prolactin levels and extrapyramidal disturbances) was investigated in chronic schizophrenics. A single dose of bromocriptine (30mg) significantly decreased prolactin levels in Ss receiving haloperidol but produced no more than a downward tendency in Ss receiving chlorpromazine. The effect of bromocriptine on extrapyramidal symptoms (EPS) was more marked in the chlorpromazine group, but side-effects such as nausea and agitation were also more common. The results show no correlation between reduction in prolactin levels produced by bromocriptine and improvement in unwanted EPS effects. This supports the hypothesis that the effect of neuroleptics on the prolactin secreting cells of the anterior pituitary and their effect on the EPS are mediated by different sets of receptors. 6 references. (Journal abstract modified)

001945 Rosenblatt, Jack E.; Wagner, Richard; DeLisi, Lynn; Bigelow, Llewellyn; Pary, Robert; Zalcman, Steve; Morihisa, John; Karson, Craig; Wyatt, Richard. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Serum neuroleptic concentrations in schizophrenia. (Unpublished paper).** Washington, DC, NIMH, 1980. 2 p.

A highly-sensitive radioreceptor assay that detects neuroleptics on the basis of their ability to block dopamine receptors was used in a study of schizophrenic inpatients. Data from studies utilizing both fixed and flexible dose designs are divided into three parts: 1) characteristics of the neuroleptic radioreceptor assay (sensitivity, selectivity, intra-assay and interassay reliability, validity as compared with other assay methods, and the effects of physical factors involved in collecting and storing samples); 2) pharmacokinetics -- data on the relationship between neuroleptic dose and serum concentration, intraindividual and interindividual differences in serum neuroleptic concentration, time required to achieve peak and steady-state serum concentrations, change in serum concentration over time, relationship of rate of neuroleptic excretion with age, and the effects of other drugs on serum neuroleptic concentrations; and 3) clinical response and serum neuroleptic concentration -- the relationship between serum neuroleptic concentration and clinical ratings of psychotic symptoms and drug-related side-effects. 3 references. (Author abstract)

001946 Sedvall, Goran. Laboratory of Experimental Psychiatry, Dept. of Psychiatry (Karolinska Hospital), Karolinska Institute, Stockholm, Sweden **Relationships among biochemical, clinical, and pharmacokinetic variables in neuroleptic-treated schizophrenic patients.** Advances in Biochemical Psychopharmacology. 24:521-528, 1980.

Relationships among biochemical, clinical, and pharmacokinetic variables in neuroleptic-treated schizophrenic patients are discussed. Concentrations of the major monoamine metabolities homovanillic acid, MOPEG and 5-hydroxyindoleacetic acid were determined by mass fragmentography in cerebrospinal fluid of schizophrenic patients before and after treatment with antipsychotic drugs. In addition to the acceleration of central dopamine metabolism, spectra of changes involving all three major monoamine metabolites were induced by different types of drugs. In chlorpromazine-treated patients, changes in central norepinephrine metabolism were better correlated to therapeutic response than the alteration of central dopamine metabolism. Changes with time of the drug concentration effect relationships in chlorpromazine treated patients indicate that long-term inductive effects are produced by chlorpromazine treatment. Studies on the monoamine metabolite pattern in untreated schizophrenic patients indicate the existence of a specific subgroup of patients with a disturbed central serotonin metabolism and a family disposition of the disorder. 11 references. (Author abstract modified)

001947 Sevestre, P.; Coloni, F.; Lagrange, J. Hopital Esquirol, Charenton - Saint-Maurice, France /**Distinguishing schizophrenias by means of pharmacotherapy.**/ Discrimination des schizophrenics par les pharmacotherapies. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1101-1104).

Factors affecting the decision to treat schizophrenics with long-acting antipsychotic medications are discussed. Therapeutic evidence indicates that: 1) different patients with identical symptomatology can present different tolerance to the same drug, 2) the same patients can demonstrate different clinical reactions to the same drug; and 3) a single patient can present different tolerance to the same drug. Hard evidence on the therapeutic efficacy of each antipsychotic is unavailable due to the varying reactions. It is concluded that the prescribing physician must handle each case individually.

001948 Stanley, Michael; Lautin, Andrew; Rotrosen, John; Gershon, Samuel; Kleinberg, David. Dept. of Psychiatry, New York University Medical Center, 550 First Ave., New York, NY 10016 **Metoclopramide: antipsychotic efficacy of a drug lacking potency in receptor models.** Psychopharmacology. 71(3):219-225, 1980.

Metoclopramide was an effective antipsychotic in hospitalized chronic schizophrenics. The mean therapeutic dose was 810mg/day, indicating an antipsychotic potency similar to that of chlorpromazine. Metoclopramide has also shown classic neuroleptic, dopamine (DA) antagonist properties in behavioral, biochemical, and neuroendocrine tests. However, metoclopramide is inactive in several DA receptor models; it does not displace radiolabeled ligands from DA receptors and does not antagonize DA-stimulated adenylate cyclase. These findings cast doubt on the validity of several predictive models and suggest that an unidentified DA-receptor subpopulation may mediate many DA-dependent neurobiological phenomena. 31 references. (Author abstract modified)

001949 Svestka, J.; Nahunek, K.; Ceskova, E.; Rysanek, R. Psychiatric Clinic 657 15 Brno-Bohunice, Czechoslovakia **Long-term controlled comparison of injection oxyprothepine and fluphenazine decanoates in psychotics in remission.** Activitas Nervosa Superior. 22(3):157-158, 1980.

A controlled comparison of long-term injection oxyprothepine and fluphenzine decanoates in maintenance doses for schizophrenic patients whose symptoms were in remission is described. Clinical state was assessed with the rating scales BPRS and DVP before treatment and at each subsequent injection. Each compound was administered for a period of 6 months alternately. No significant differences between the two compounds were found for therapeutic effect, tolerance, dosage, or intervals between injections. Both depot neuroleptics are characterized as significant advances in the pharmacoprophylaxis of schizophrenic psychoses. 3 references.

001950 Thulesius, Olav; Nielsen, Fritz. Dept. of Phsiology, Centrallasarettet, S-35185, Vaxjo, Sweden **Drug-induced arterial hypotension in psychiatric patients treated with dihydroergotamine.** Nordisk Psykiatrisk Tidsskrift. 33(2):79-84, 1979.

Orthostatic hypotension with symptoms of decreased blood flow and mental retardation was examined among hospitalized psychiatric patients receiving major tranquilizers. Sixty-five patients with previously known orthostatic complaints such as dizziness and faintness on standing, dimming of vision, generalized weakness, and occasionally syncope were tested with a standard orthostatic test which included measurement of blood pressure, electrocardiogram and heartrate after resting control periods. The majority of patients had chronic psychosis (schizophrenia n=39) and depressive psychosis (n=16) with various other abnormalities in the remainder. All patients received neuroleptics and/or thymoleptics and other tranquilizers. After a washout period of one week of placebo (no blood pressure elevating drugs) and maintenance of psychotropic drugs, a new orthostatic test was performed. Thereafter certain patients were randomly given hydroergotamine (DHE) at an oral dosage of 5mg two times per day. A repeated evaluation was performed after one week. Results are discussed in terms of the prevalence of orthostatic pathological reactions and orthostatic symptoms in 28% of the hospitalized patients. Treatment with appropriate doses of dihydroergotamine (2.5mg times 4) decreased blood pressure fall and orthostatic symptoms. The most pronounced cases of orthostatic blood pressure fall were found among patients receiving a combination of psychotropic drugs and with extrapyramidal symptoms. 7 references.

001951 van Kammen, D. P.; Docherty, J. P.; Marder, S. R.; Bunney, W. E., Jr. NIMH, Bethesda, MD 20205 **Paradoxical improvement following i.v. amphetamine in schizophrenia. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 1 p.

Forty-five schizophrenic patients were given 20mg d-amphetamine i.v. in a double-blind test and behvioral effects were then tested on the Brief Psychiatric Rating Scale (BPRS) and a psychosis item. Also, the Research Diagnostic Criteria (RDC) diagnosis, clinical variables, spinal fluid levels of 3-methoxy-4-hydroxyphenlyglycol (MHPG) and homovanillic acid (HVA) were evaluated against the d-amphetamine-induced behavioral change. It was found that d-amphetamine did not change the psychosis rating for the 45 patients. Significant decreases in the BPRS withdrawal/retardation cluster, much larger than after placebo, were consistently observed, as well as increases in mannerism and posturing and activation. Thirteen patients improved one point or more, 18 patients worsened in psychosis one point or more, and 14 patients did not change. The preinfusion psychosis rating were significantly different among the three groups, with the improvers appearing most psychotic, the worseners less psychotic, and the nonchangers nonpsychotic or minimally psychotic. Preinfusion CSF MHPG levels correlated with the change in psychosis. Furthermore, clinical subclassification did not help to predict the type of response in psychosis. Neither age, sex, age of onset of illness, premorbid functioning nor RDC diagnosis of schizophrenia or schizoaffective disorder were different among the three groups of patients. The data suggest that the preinfusion clinical state and norepinephrine, but not necessarily dopamine turnover, played a role in the type of response to d-amphetamine. (Author abstract modified)

001952 van Kammen, Daniel P.; Sternberg, D. E.; Lake, C. R.; Lerner, P. NIMH, Bldg. 10, 4N-214, Bethesda, MD 20205 **Methodological issues in spinal fluid studies of schizophrenia: the case of norepinephrine and dopamine-beta-hydroxylase. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 23 p.

When cerebrospinal fluid (CSF) levels of norepinephrine (NE) and dopamine-beta-hydroxylase (DBH) were assessed in schizophrenic patients and healthy controls, CSF NE appeared to be significantly higher in schizophrenic patients than in controls. Good premorbid functioning patients had low DBH activity, although the entire schizophrenic group did not differ from the controls. Low DBH activity also related to good antipsychotic drug response. Pimozide decreased NE levels relative to its antipsychotic effect without affecting DBH levels. If these findings are confirmed, an important role for the NE system will be evident in at least a subgroup of schizophrenic patients. In addition, these results provide guidelines and further impetus for evaluating CSF peptides in schizophrenia, particularly those that interact with dopamine and NE systems. 75 references. (Author abstract)

001953 van Ree, Jan M.; de Wied, David; Verhoeven, Wim M. A.; van Praag, Herman M. Rudolf Magnus Institute for Pharmacology, Medical Faculty, University of Utrecht, Utrecht, The Netherlands **Antipsychotic effect of gamma-type endorphins in schizophrenia.** Lancet. No. 8208/9:1363-1364, 1980.

Symptoms, illness course, and drug history of schizophrenic patients were assessed to determine whether response to gamma-type endorphin (des-Tyr1-gamma endorphin) is dependent on these characteristics. The duration of neuroleptic treatment and the dosage used for 6 weeks before the trial were also examined. It was found that not all types of schizophrenics react similarly to treatment with gamma-type endorphins. The responses varied from no effect to complete remission of psychotic symptoms. It is suggested that a beneficial effect of gamma-type endorphins may occur in patients whose most recent psychotic episode was short and who are not on drugs or are taking only low doses of neuroleptic drugs. 10 references.

001954 Vranckx, C.; Minne, Ph.; Benghezal, A.; Moeglen, J. M.; Audibert, A. Hopital Psychiatrique, Tienen, Belgium **Vasopressin and schizophrenia.** In: Obiols, J., Biological psychiatry

today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 753-758).

The effectiveness of lysin-8-vasopressin, administered after a washout period without placebo at a daily dose of 7.5 to 45 I.U. as a nasal spray, was assessed over a 4-week period in 16 chronic schizophrenic patients. Response was evaluated at 3, 7, 14, 21, and 28 days on the Brief Psychiatric Rating Scale and a final overall assessment was made on day 28. The tolerance and safety parameters included an ECG and laboratory tests before and after treatment, along with measurements of pulse, blood pressure, and urinary output throughout the trial. Fourteen Ss improved on vasopressin, and in three the improvement was spectacular. Tolerance was excellent. Future research should evaluate these findings and study the relationship between vasopressin and the endorphins. 11 references. (Author abstract modified)

001955 Wessels, W. H.; Gosling, J. A. Dept. of Psychiatry, University of the Orange Free State, Bloemfontein, South Africa **The clinical efficacy of clozapine as compared to laboratory parameters.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 959-962).

Clozapine (a piperazine derivative of dibenzodiazepine) was administered to 15 hospitalized schizophrenics to ascertain its clinical efficacy, side-effects, and effect on blood pressure and pulse rate, as well as to determine the serum levels of the drug itself and the drug plus its metabolites. The results indicate that: 1) clozapine is effective in treating schizophrenia; 2) the supine pulse rate offers a practical indication of expected serum levels of the drug plus its metabolites and is helpful in checking patient compliance; 3) serum levels reach steady-state on day 5 and maximum side-effects occur on the same day; 4) serum levels cannot assist in determining therapeutic efficacy or side-effects; 5) no accumulation occurs during the first 6 weeks; and 6) a certain period of exposure to a constant serum level is necessary for clinical improvement. 3 references. (Author abstract modified)

001956 Wiles, D.; Franklin, M.; Dencker, S. J.; Johansson, R.; Lundin, L.; Malm, U. University of Oxford, Dept. of Psychiatry, Littlemore Hospital Research Unit, Oxford, England **Plasma fluphenazine and prolactin levels in schizophrenic patients during treatment with low and high doses of fluphenazine enanthate.** Psychopharmacology. 71(2):131-136, 1980.

Plasma prolactin (PRL) and fluphenazine (FPZ) levels were measured by radioimmunoassay in 11 chronic schizophrenics during two 4-week periods of treatment with low (12.5mg/week) or high (250mg/week) doses of FPZ. Plasma PRL levels were elevated during the last week of the low dose regimen in nine of the 11 Ss and were further elevated during high-dose treatment. A significant correlation between PRL and FPZ levels was found in seven Ss. 24 references. (Author abstract modified)

001957 Wyatt, Richard J.; Moja, Egidio A.; Karoum, Farouk; Stoff, David M.; Potkin, Steven G.; Kleinman, Joel E. Adult Psychiatry Branch, Division of Special Mental Health Research, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Phenylethylamine, dopamine and norepinephrine in schizophrenia. (Unpublished paper).** Washington, DC, NIMH, 1980. 6 p.

Studies of the possibility that phenylethylamine (PEA) might be related to the causes of schizophrenia are briefly reviewed, and the question of whether there might be a connection between the elevated urinary PEA concentrations and norepinephrine in the nucleus accumbens of paranoid schizophrenic patients is considered. To determine not only if acute PEA administration increased norepinephrine in the CSF, but also whether chronic PEA increased norepinephrine in the brain itself, PEA (100mg/kg) was administered to rats intragastrically twice daily for 10 days. The rats were sacrificed 2 hours after the last dose. Of the various brain areas analyzed, norepinephrine concentrations were selectively and significantly increased in only the hypothalamus (36% above controls) and the nucleus accumbens (96% above controls). Norepinephrine's major metabolite, 3-methoxy-4-hydroxyphenylglycol was also increased in the hypothalamus (47% above controls), but remained normal in the nucleus accumbens. In contrast, dopamine was not changed, but 3-4-dihydroxyphenylacetic acid was slightly increased. These biochemical findings of increased norepinephrine concentrations in the nucleus accumbens after administration of PEA are consistent with findings that application of PEA to the nucleus accumbens potentiates PEA stereotypy and hyperactivity. 19 references.

001958 Wyatt, Richard Jed; Karoum, Farouk; Stoff, David M.; Kleinman, Joel E.; Gillin, J. Christian; Jeste, Dilip V.; Potkin, Steven G. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Monoamine oxidase, phenylethylamine, norepinephrine and schizophrenia. (Unpublished paper).** Washington, DC, NIMH, 1980. 16 p.

The hypothesis that norepinephrine (NE) may be causally related to at least some form of schizophrenia through a series of metabolic events, the first of which is a decrease in monamine oxidase (MAO) activity, was tested. The hypothesis predicts further that a decrease in MAO activity increases the concentration of phenylethylamine (PEA) in the brain, which in turn increases NE turnover. It was found that the chain of events from decreased MAO activity in the peripheral blood of certain schizophrenic patients, particularly paranoid patients, to increased concentrations of PEA, to increased NE and NE turnover in the brain of schizophrenic patients, may prove not to be as closely linked as the current hypothesis and available data suggest. Nevertheless, it has been shown that the notion that this chain exists is testable and that it provides an integrated hypothesis of etiology for a subgroup of schizophrenic patients. 50 references.

001959 Zimmer, Reinhilde; Teelken, Albert W.; Meier, Klaus D.; Ackenheil, Manfred; Zander, Karl J. Psychiatric Hospital of the University of Munich, Nussbaumstrasse 7, BRD, D-8000 Munchen 2, West Germany **Preliminary studies on CSF gamma-aminobutyric acid levels in psychiatric patients before and during treatment with different psychotropic drugs.** Progress in Neuro-Psychopharmacology. 4(6):613-620, 1980.

GABA levels were measured in the cerebrospinal fluid of untreated schizophrenics, schizophrenics treated with various psychotropic drugs, and control patients. GABA levels in untreated schizophrenics did not differ from control values, but schizophrenics given sulpiride for 30 days or treated chronically with various neuroleptics had elevated GABA levels. In patients treated with various neuroleptics combined with benzodiazepines and antiparkinsonian drugs for 6 weeks, GABA levels were decreased compared to controls. 21 references. (Author abstract modified)

09 DRUG TRIALS IN AFFECTIVE DISORDERS

001960 Alby, J. M.; Ferreri, M. Ferreri: Hopital Saint-Antoine, 184, rue du Fg Saint-Antoine, F-75571 Paris, France **/Antidepressant action of injectable 1694./** Action thymoanaleptique du 1694 injectable. Psychologie Medicale. 11(A):105-107, 1979.

The antidepressant action of injectable 1694 was studied in 21 patients suffering from neurotic and psychotic depression. They were treated with 100 to 400mg of amineptine infused intrave-

nously in 500ml of glucose solution for 13 to 21 days. The administered oral dose was 100mg three times a day. Anxiolytics and nonbarbiturate hypnotics were administered in addition to amineptine. The best results were obtained in patients with involutional melancholia. It was found that the essential characteristic of amineptine was its rapid action; improvement was noted by the 5th or 6th day. (Journal abstract modified)

001961 Alby, J. M.; Ferreri, Maurice. Dept. de Psychiatrie et de Psychologie medicale, Hopital Saint-Antoine, 184, rue du Faubourg Saint-Antoine, F-75012 Paris, France **/Study of maprotiline in outpatient treatment of depressive states by the general practitioner: advantage of single nightly dose./** Etude de la maprotiline dans le traitement ambulatoire des etats depressifs par le generaliste. Interet d'une prise unique vesperale. Psychologie Medicale. 12(6):1381-1391, 1980.

The use of maprotiline in the outpatient treatment of depressive conditions was studied. A dosage of 75mg was administered orally once a night to 80 patients suffering from various forms of depression; the average length of treatment was 62 days. Results indicate tangible improvement in 81% of the cases (60% good or excellent results, 21% moderate results). The drug facilitated a reduction of anxiety. It is concluded that maprotiline is a sedative antidepressant whose efficacy is satisfactory in the treatment of depression; the fact that the tolerance of the drug was substantial allows for use even in the elderly. 78 references. (Journal abstract modified)

001962 Angst, J.; Koukkou, Martha; Stassen, H. H. Research Dept., Psychiatric University Hospital, Zurich, Switzerland **Clinical and EEG changes in depressive patients after a single injection of beta-endorphin.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 806-811).

Evidence that beta-endorphin in man has some antidepressant pharmacological activity was confirmed, with an emphasis on the clinical and EEG changes following single injections in six female patients. The injection was well tolerated in all but one S. The depressive psychopathology was measured via self-ratings within the first 20 to 30 min. There was an initial increase of energy and mood, and a decrease in anxiety, depression, and restlessness. These changes persisted for 2 hours. Thereafter, four Ss relapsed and in two cases the improvement remained stable. Two patients showed a switch from depression to hypomania and one patient switched to mania. Several experimental conditions that may have partially influenced the patients' responses are considered. 6 references.

001963 Ballus, C.; Ortega-Monasterio, L.; Gasto, C. Facultad de Medicina, Universidad de Barcelona, Barcelona, Spain **/Results of a survey on the present treatment of depression in Spain./** Resultados de una encuesta sobre el tratamiento actual de las depresiones en Espana. Revista de Psiquiatria y Psicologia Medica de Europa etc. 14(6):101-118, 1980.

The results of a survey sent to all the psychiatrists in Spain are presented. Responses were received from 228 psychiatrists. Questions dealt with types of depression treated, daily dosage of medication, drugs used, and type of center where treatment was administered. The incidence of depression is found to be very great: 47.4% of those surveyed diagnosed it in half of their patients and 30.7% in the majority of their patients. Drugs have reduced the number of patients who have to be hospitalized, and 84.6% of the doctors consider drugs to be the basic therapy for depression. Antidepressants are usually given in doses divided throughout the day. Specific drugs used and their effectiveness with various types of depression are described.

001964 Ban, Thomas A.; McEvoy, Joseph P.; Wilson, William H. Clinical Research Service, Tennessee Neuropsychiatric Institute, 1501 Murfreesboro Road, Nashville, TN 37217 **Viloxazine: a review of the literature.** International Pharmacopsychiatry. 15(2):118-123, 1980.

Chemical structure, pharmacodynamics, pharmacokinetics, and side-effects of the bicyclic antidepressant, viloxazine are examined in a review of the literature. In animal pharmacological studies, viloxazine has shown similarities to imipramine. The antidepressant effects of the substance were independently recognized in seven uncontrolled clinical trials and verified in 11 published, standard controlled clinical studies in which viloxazine in the dose range of 150 to 300mg was equal on overall therapeutic efficacy to imipramine and amitriptyline, but produced a lower incidence of side-effects. 29 references. (Author abstract modified)

001965 Bathien, N.; Ferreri, M.; Alby, J. M. Faculte de Medecine Saint-Antoine, 184, rue du Faubourg-Saint-Antoine, F-75012 Paris, France **/Variations in psychophysiological activation responses in depressive states./** Variations des reponses psychophysiologiques de l'activation dans les etats depressifs. Annales Medico-Psychologiques. 138(8):974-985, 1980.

Cognitive capacities of healthy and depressed individuals were compared by recording their psychophysiological responses to activation tests. Ss were 20 healthy adults and 22 hospitalized psychiatric patients. Tests chosen were the Barr test and voluntary hyperventilation (VHV). Results between the two groups were comparable, except for the H-reflex during the VHV test, where there was a significant difference. In normal Ss this reflex was inhibited, while in depressed Ss it increased. However, the reflex increases significantly less in depressed Ss after treatment with antidepressant drugs. 18 references. (Journal abstract modified)

001966 Belmaker, Robert H.; van Praag, H. M. Jerusalem Mental Health Center, Jerusalem, Israel **Mania: an evolving concept.** New York, Spectrum Publications, 1980. 403 p.

The current understanding of mania is explored from psychological, biological, and social perspectives. The first clear exposition of doubt or retraction of five dogmas is presented: 1) the prognosis of mania is not always excellent; 2) X-linkage of manic-depressive illness is not proven; 3) lithium is not specific for manic-depressive illness; 4) lithium is not clearly effective in inhibiting amphetamine-induced euphoria in animal models of mania; and 5) dopamine, and not noradrenalin or serotonin, may be the biochemical mediator of mania.

001967 Bertilsson, L.; Tuck, J. R.; Siwers, B. Dept. of Clinical Pharmacology, Karolinska Institutet, Huddinge Hospital, S-141 86 Huddinge, Sweden **Biochemical effects of zimelidine in man.** European Journal of Clinical Pharmacology. 18(6):483-487, 1980.

The biochemical effects of the novel drug zimelidine were assessed in 12 depressed patients. After about 3 weeks plasma levels of the demethyl metabolite, norzimelidine, were almost triple those of the parent drug. The major central metabolites of serotonin (5-HIAA) and noradrenaline (HMPG) in cerebrospinal fluid (CSF) decreased significantly during treatment with zimelidine. Although there was no mean change in the major dopamine metabolite (HVA) in CSF, the level during treatment was correlated with the effect on 5-HIAA in CSF. Thus, administration of zimelidine caused a relatively selective inhibition of serotonin uptake, mainly due to norzimelidine. A small but significant inhibition of noradrenaline uptake was also seen, but this effect was less pronounced than during chlorimipramine treatment. There was also an effect on the dopaminergic system,

probably secondary to the action on serotonergic neurons. 17 references. (Author abstract modified)

001968 Bjorndal, N.; Kristjansen, P.; Waehrens, J. Sct. Hans Hospital, Dept. H, DK-4000 Roskilde, Denmark **Nomifensine in the treatment of various types of depression.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1043-1048).

A group of 24 patients with endogenous or reactive depression which was refractory to tricyclic antidepressants and/or ECT was treated with nomifensine in doses from 75mg to 125mg per day. Nomifensine proved a particularly useful alternative in treating endogenous depression, while the effect was most evident in regard to agitation in the reactive depression group. The effect of the treatment began earlier in the patients with endogenous depression and was more pronounced during the first 2 weeks, whereas the patients with reactive depression improved more slowly. The drug ameliorates intellectual resources and leads to an increased level of activity in organic dementia. In two patients, overdosage led to delirious reactions accompanied by stereotyped behavior which were neutralized by haloperidol in accordance with animal experiments. None of the Ss showed an aggravated cardiac status or orthostatic hypotension. 20 references. (Author abstract modified)

001969 Brion; Kamoun, A.; Zarafian, Loo; Poirier; Porot, M.; Poignant, J. C.; Omerongen; Krikorian; Dufour; Feline; Vauterin; Bornstein; Coche. no address **/The place of Survector among the various drugs used in treatment of mood disorders./** Place du Survector parmi les differentes therapeutiques des troubles de l' humeur. Psychologie Medicale. 11(A):115-122, 1979.

A roundtable discussion of the pharmacological, chemical and pharmacokinetic properties of amineptine is presented. It was found that its effect on depression is generally good; that it is more effective in reactional neurotic depression and less effective in endogenous depression. Few cases of psychotic depression were observed and consequently its effect for this form of depression is not clearly known. There were few failures and tolerance was found to be excellent. No amphetamine effects were observed. All studies showed that the drug was more effective than the products of reference. Its effect on sleep walking is discussed. Clinical experiences with amineptine are described.

001970 Brown, W. A.; Laughren, T. P.; Mueller, B. Providence V. A. Medical Center, Providence, RI **Endocrine effects of lithium in manic depressive patients.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 759-763).

The effects of lithium on several endocrine systems were investigated in manic-depressive patients using a variety of techniques. It was found that cortisol secretion is transiently increased during the initial phase of lithium treatment. Lithium appears to inhibit prolactin secretion as assessed over 24 hours. While lithium does not alter basal levels of growth hormone, it alters the growth hormone response to pharmacological stimuli. These data are discussed in light of previous findings. Lithium appears to have subtle but clear effects on the regulation of multiple endocrine systems. 12 references. (Author abstract modified)

001971 Brown, Walter Armin; Haier, Richard J.; Qualls, C. Brandon. Dept. of Psychiatry, Brown University, Providence, RI 02912 **Dexamethasone suppression test identifies subtypes of depression which respond to different antidepressants.** Lancet. No. 8174:928-929, 1980.

Depressed patients underwent a dexamethasone suppression test (DST) to determine their reactivity to different antidepressants. Eight (42%) of the patients were nonsuppressors, and the remaining patients evidenced suppression. As predicted, the nonsuppressors treated with desipramine and imipramine (affecting noradrenaline uptake) showed considerable improvement as assessed on the global rating scale, the nonsuppressors treated with amitriptyline and clomipramine (affecting serotonin uptake) showed little or no improvement. Among the suppressors the reverse occurred with amitriptyline and clomipramine-treated patients showing significantly greater improvement than the desipramine and imipramine-treated patients. The feasibility of the use of the DST and implications of the findings are discussed. 5 references.

001972 Brunner, H.; Huck, F. Centre Hospitalier Specialise, F-67170 Brumath, France **/Clinical study of viloxazine./** L'etude clinique de la viloxazine. Encephale. 6(3):247-257, 1980.

An open study of viloxazine was conducted in a psychiatric unit by giving the drug to 36 patients, half of whom were aged 60 years. Of these, 28 were affected by a psychotic depression and six by a neurotic depression. In terms of the importance of the depressive signs, medium doses (300 mg a day) or strong doses (600 mg a day) were used. The results were excellent or good in 65% of the cases. To be effective, treatment must be extended and higher dosages may be necessary. Involutional melancholia and the depressive phase of chronic psychosis are best treated with viloxazine. Hypnotics must be associated, but systematic prescription of anxiety relieving must be avoided. Tolerance was satisfactory in three cases out of four, and the drug was free from the clinical counterindications of other antidepressants. This allows for its prescription in high doses without any harm. (Journal abstract modified)

001973 Bunney, William E., Jr. Biological Psychiatry Branch, NIMH, Bldg. 10, 3N212, Bethesda, MD 20205 **Psychobiological research in manic-depressive illness. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 19 p.

Psychobiological studies of manic-depressive illness (including genetic factors, diagnostic classification of unipolar and bipolar, the utilization of the change from depression into mania as a research strategy, new treatment approaches in depression, and the possible role of dopamine in the onset of mania) are reviewed. It is hypothesized that supersensitive dopamine receptors may develop prior to the onset of mania. Behavioral, binding, and electrophysiological evidence has been accumulated that lithium can prevent the development of supersensitivity of dopamine receptors in the central nervous system. It is possible that lithium's ability to prevent recurrent manic episodes may be related, at least in part, to its ability to stabilize dopamine receptor sensitivity. Data is reviewed that show that a functional increase in dopamine may be involved in the manic process. Drugs that increase functional CSF dopamine (such as L-dopa) may be associated with hypomania, and drugs that decrease functional dopmamine (such as AMPT and pimozide) can be associated with a decrease in manic symptomatology. 57 references.

001974 Burner, Marcel. Polyclinique Psychiatrique Universitaire, St-Pierre 1, CH-1003 Lausanne, Switzerland **/Attempt at psychological understanding and treatment of psychological asthenia and astheno-depressive syndromes using Ergadyl./** Essai de comprehension psyhologique et de traitement des asthenies psychiques et des syndromes astheno-depressifs par l'Ergadyl. Psychologie Medicale. 12(6):1371-1377, 1980.

Treatment of psychological asthenia and astheno-depressive syndromes using ergadyl was studied. An average dosage of

four tablets daily was administered to 84 depressive and neurotic patients between the ages of 26 and 78. The majority had been treated for long periods with antidepressants, neuroleptics, tranquilizers, or hypnotic agents and expressed a feeling of fatigue, decreased activity, and decreased concentration. Results indicate that 70 of the 84 patients (83%) demonstrated a marked decrease of asthenia, and in 55 patients (65%) there was complete disappearance of physiological and psychological asthenia with a favorable return to normal life. The efficacy of the ergadyl was progressive, developing over 8 days. Clinical tolerance was very good. 13 references. (Journal abstract modified)

001975 Ceskova, E.; Nahunek, K.; Svestka, J. Psychiatric Clinic UJEP, Jihlavska 100, 657 15 Brno-Bohunice, Czechoslovakia **Clinical experience with second generation antidepressants in endogenous depressions.** Activitas Nervosa Superior. 22(3):165-166, 1980.

Clinical experience with second generation antidepressants (maprotilin, azafen, viloxazin, mianserin, impavide, nomifensin, and pyrazidol) in the treatment of 385 cases of endogenous depression is described. It is noted that second generation antidepressants do not have the classical tricyclic structure and are not marked MAO inhibitors. Some lack the antagonistic effect to reserpine, have no anticholinergic effect, or do not inhibit the uptake of serotonin and noradrenaline. Although the therapeutic effects of these second generation antidepressants was mostly not superior to classical tricyclic antidepressants, there were fewer side-effects. The value of the antidepressive index as a guide to prescribing these drugs is noted. 1 references.

001976 Coppen, A.; Montgomery, S.; Ghose, K.; Rama Rao, V. A.; Bailey, J.; Christiansen, J.; Mikkleson, P. L.; van Praag, H. M.; van de Poel, F. Medical Research Council Neuropsychiatry Laboratory, West Part Hospital, Epsom, Surrey, England **Amitriptyline plasma-concentration and clinical effect: a World Health Organization collaborative study.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 541-550).

The relationship between steady-state plasma levels of amitriptyline (AT), as well as its active metabolite nortriptyline (NT), and therapeutic response of depressed inpatients was examined. The 54 Ss received 75mg of amitriptyline for 3 days, followed by 150mg daily for 6 weeks. Data obtained at 2, 4, and 6 weeks after initiation of therapy indicated no important correlations between steady-state plasma levels and therapeutic outcome or corrected side-effects. Corrected side-effects correlated negatively with therapeutic outcome. It is concluded that there is little advantage in the routine monitoring of AT and NT, since variations in plasma levels do not account for the considerable variation in therapeutic outcome. 12 references. (Author abstract modified)

001977 Coppen, A.; Wood, K. MRC Neuropsychiatry Laboratory, West Park Hospital, Epsom, KT19 8PB, Surrey, England **/Clinical and biological studies of L-tryptophan in depression./** Etudes cliniques et biologiques du L-tryptophane dans la depression. Encephale. 5(5, Suppl.):627-632, 1979.

Findings concerning the therapeutic activity of L-tryptophan in the treatment of depression are considered. There is good evidence that tryptophan increases the antidepressant activity of monoamine oxidase inhibitors. The antidepressant activity of tryptophan and 5-hydroxytryptophan (5-HT) has also been the subject of numerous studies. There is evidence that patients with decreased cerebrospinal fluid concentration of 5-hydroxyindoleacetic acid respond particularly favorably to this treatment. The therapeutic activity of tryptophan has led to the investigation of the plasma concentration of tryptophan. Free plasma tryptophan (tryptophan unbound to plasma protein) appears decreased after administration of the drug. There is also evidence that tryptophan and 5-HT transported are abnormal in depression. 31 references. (Journal abstract modified)

001978 Costa-Molinari, J. M.; Ferrer-Vidal, L.; Malga, A.; Vallve, C. Instituto Municipal de Psiquiatria, Barcelona, Spain **Nomifensine in the treatment of endogenous depression. A controlled study vs. nortriptyline.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1039-1042).

The use of nomifensine in treating endogenous depression was investigated by comparing it with nortriptyline in 28 hospitalized psychiatric patients. Both treatments produced strong improvement with severely ill patients. Slight, but nonsignificant differences favoring nortriptyline were noted between groups which were attributed to the fact that nomifensine Ss were initially more severely ill.

001979 Costa, Daniel; Predescu, Vasile; Visan-Ionescu, Ilena; Ciurezu, Tiberiu. Dept. of Psychiatry, Institute of Medicine and Pharmacy, Bucharest Soseaua Berceni 10-12, R-75622 Bucharest, Romania **Endogenous depression and imipramine levels in the blood.** Psychopharmacology. 70(3):291-294, 1980.

Imipramine and desmethylimipramine levels in the blood of 20 nondelusional endogenous depressive patients after 3 weeks of treatment were assessed by a method available in ordinary clinical chemistry laboratories. A positive significant correlation between blood levels and percentage change in scores on the Hamilton scale was found. Patients with levels above 85ng/ml had a significantly better therapeutic response than patients with levels below 85ng/ml. Among the 11 nonresponders, eight had low levels, two had intermediate levels, and one had the highest level of the study. In a given nonresponder, approximate determination of imipramine plus desmethylimipramine in the blood may be useful. 29 references. (Author abstract modified)

001980 Crocq, Louis; Bugard, Pierre; Fondarai, Joseph; Boscredon, Jeanine; Bruneaux, Jacky; Charazac, Pierre; Clerc, Gerard; Darondel, Alain; Drevet, Michel. Universite Paris V, Paris, France **/Treatment of astheno-depressive disorders with minaprine (Cantor). Multicenter study of 248 cases evaluated with the Fatigue Study Group's No. 4 Clinical Scale./** Traitement des etats astheno-depressifs par la minaprine (Cantor). Etude multicentrique de 248 cas evalues par l'echelle clinique G.E.F.4. Psychologie Medicale. 12(12):2643-2661, 1980.

The effect of minaprine in ambulatory astheno-depressive states was studied in a cooperative multicenter trial. Two-hundred forty-eight patients from 11 centers were evaluated, using a specially designed clinical scale comprising a standard clinical examination of 87 items, including 22 symptomatologic items. Patients were rated on the scale during interviews held on days 0, 7, 21, and 28 while being treated with 200mg/day minaprine for a month. A computer study was then made to determine which symptoms and syndromes improved the most and the fastest. Overall results were satisfactory; best results were obtained for the syndromes reacting to psychological or somatic factors and for the clinical symptoms of physical and psychic asthenia, intellectual, thymic, and motor inhibition, and low level of emotional control. 46 references. (Journal abstract modified)

001981 Cronholm, B. Dept. of Psychiatry, Karolinska Hospital, S-104 01 Stockholm, Sweden **/Use of antidepressants: pharmacokinetic bases./** Utilisation des antidepreseceurs: bases pharmacocinetiques. Encephale. 5(5, Suppl.):605-615, 1979.

Perspectives on the pharmacokinetics of antidepressants are presented. An adequate concentration of the drug at the cere-

bral receptors is a reasonable prerequisite for treatment success. This concentration is likely to be reflected by the plasma level of the drug that may display great variations in different individuals receiving the same dosage, mainly due to variations in drug metabolism. While a fairly simple linear relation between blood level and therapeutic outcome is usually found, some drugs show a curvilinear relation between level and outcome; the effect is optimal within a certain concentration range, but the effect worsens with both lower and higher concentrations. Monitoring treatment by means of measuring blood concentration may be desirable in certain situations. With dimethylated drugs the effects may be complicated if the drug itself and some metabolite act on different transmitter systems. 13 references. (Journal abstract modified)

001982 d'Elia, G.; Frederiksen S.-O. Dept. of Psychiatry, 5016 Haukeland Hospital, Haukeland, Norway **ACTH4-10 and memory in ECT-treated and untreated patients. I. Effect on consolidation.** Acta Psychiatrica Scandinavica. 62(5):418-428, 1980.

The possible effect of a single dose of ACTH4-10 on memory as measured with a test battery appropriate for the study of consolidation was investigated. Twenty depressive inpatients participated in the intraindividual double-blind cross-over comparison between ACTH4-10 and placebo in connection with the second and third treatment in the electroconvulsive therapy (ECT) series. Memory functions were examined 90 min before and 150 min after the administration of the drug. A similar design was used in a study of 20 inpatients with neurotic depression not treated with ECT. Results of both studies gave no evidence of a positive infuence of a single dose of ACTH4-10 on consolidation of memory. 39 references. (Author abstract)

001983 d'Elia, G.; Frederiksen, S.-O. Dept. of Psychiatry, 5016 Haukeland Hospital, Haukeland, Norway **ACTH4-10 and memory in ECT-treated patients and untreated controls. II. Effect on retrieval.** Acta Psychiatrica Scandinavica. 62(5):429-435, 1980.

The question of whether a single dose of ACTH4-10 could alleviate the retrograde dysmenesic effects of unilateral electroconvulsive therapy (ECT) and improve retrieval was investigated. Twenty depressive inpatients participated in the study, which was a double-blind intraindividual cross-over comparison between ACTH4-10 and placebo. The drug was administered 150 min after learning and 90 min after the second or third ECT unilateral treatment. Retrieval was tested 30 min after the administration of the drug. An identical design was used in 20 unmedicated healthy female subjects. The results of both studies give no support to the hypothesis that a single dose of ACTH4-10 facilities memory retrieval. 14 references. (Author abstract)

001984 Davis, Glenn C.; Extein, Irl; Reus, Victor I.; Hamilton, William; Post, Robert M.; Goodwin, Frederick K.; Bunney, William E., Jr. 3B09 Coleman, 956 Court, U.T.C.H.S., Memphis, TN 38105 **Failure of naloxone to reduce manic symptoms.** American Journal of Psychiatry. 137(12):1583-1585, 1980.

A double-blind placebo study was conducted in which patients with a wide range of manic symptoms were administered 20mg of naloxone subcutaneously. Naloxone failed to improve manic severity, activation arousal, or elation grandiosity for intervals up to 3 hours. Global nurse ratings of mania did not improve over an 8-hour period. It is suggested that the question of endorphin involvement in mania has not been resolved, and clinical studies with longer-acting oral narcotic antagonists such as naltrexone are recommended. 19 references. (Author abstract)

001985 De Maio, Domenico; Sesso, Mariano; Minzi, Alessandro Levi; Caponeri, Massimo A.; Mellado, Carmen; Bonicalzi, Michele. Servizio di Psichiatria, Ospedale Fatebenefratelli, Corso di Porta Nuova, 23, I-20121 Milano, Italy **Evaluation of the clinical efficacy of single daily doses of antidepressants.** Progress in Neuro-Psychopharmacology. 4(6):607-612, 1980.

Divided and single daily dose regimens for nomifensine (100 to 200mg/day) were compared in patients with neurotic depression. No differences in clinical efficacy and safety were found: no side-effects could be attributed specifically to nomifensine. These findings are consistent with previous results from a comparative study of three dose regimens for amitriptyline. 29 references. (Author abstract modified)

001986 Dreosti, Ivor E. no address **Lithium and mania: hypotheses.** Medical Journal of Australia. 2(5):235-236, 1980.

Hypotheses concerning the action of lithium and its effect on mania are examined. Bunney et al. (1979) cite three possible sites of action for lithium at the cellular level and propose that lithium may act in preventing the onset of manic episodes by blocking the development of supersensitive neuronal receptors, which would otherwise amplify the effect of released neurotransmitters. Lithium is proposed as a pharmacological agent and not an essential trace nutrient. Sheard (1980) notes that lithium also interferes with the action of amino acid neurotransmitters and may compete with sodium at the synaptic junction. Based on research on lithium and manic illness in India, several researchers attribute lithium's therapeutic action to its function as an essential trace element. It is concluded that it is difficult to support the proposal that lithium has an essential biological function; the evidence seems to suggest that its action is entirely pharmacological. 9 references.

001987 Dunner, David L.; Ostrow, David G.; Duhm, Jochen; Dorus, E. New York State Psychiatric Institute, New York, NY **Discussion of clinical papers on lithium transport in affective disorders.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1159-1160).

The issue of decreased lithium/sodium counterflow in mental patients is discussed, and its relationship to psychotropic drug administration is analyzed. The finding of several lines of genetic and biochemical evidence indicating heterogeneity in the diagnosis of bipolar affective illness is given as grounds for examining large numbers of patients in order to sort out those with significantly altered red cell ion transport and to investigate any psychiatric consequences of these alterations. The relative rarity of the occurrence of decreased counterflow in patients (less than one fourth of the manic-depressive subtype of bipolar patients in the studies cited) increases the need for large-scale, well-controlled collaborative studies.

001988 Evans, L. no address **Depression: how to rationalise drug therapy.** Current Therapeutics. 21(11):57-58, 60-61, 1980.

The medical management of a man suffering from depression is discussed between the patient's general practitioner and a consultant. The background of the patient indicates that the depression's etiology is difficult to determine. There is evidence that it can be either reactive depression or endogenous depression. The drug regimen used included propranolol, pindolol, doxepin, and isocarboxazid. Admission to a hospital relieved his depression suggesting that his was a reactive depression. It is concluded that this patient's prognosis is not favorable and that further changes in medication should be undertaken cautiously. 5 references.

001989 Fieve, Ronald R.; Meltzer, Herbert L.; Dunner, David L.; Fleiss, Joseph L. New York State Psychiatric Institute, New York, NY **Lithium pump repression as an indicator of prophylactic response.** In: Obiols, J., Biological psychiatry today. Vol. B.

Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1123-1127).

A group of bipolar manic-depressives with primary affective disorder on a constant dose of lithium were evaluated over 24 months for lithium pump repressions and its predictive value for prophylactic response. Ss were evaluated by a global scale and a quantitative morbidity score, which summed up deviations from normal mood and behavior plus the need for a psychotropic drug when relapse into mania or depression occurred. Results show that Ss with a lower efflux pump show good prophylaxis provided the dose is held constant and clinical observations are carried out for at least 4 months. Ss whose pumps were not repressed adequately showed more affective morbidity. Since the RBC/plasma lithium ratio is determined partly by peripheral pharmacokinetics and depends strongly on the plasma lithium level, it is proposed that the lithium pump repression index is a more accurate and useful predictor of prophylactic response than the RBC/pl Li ratio. 12 references. (Author abstract modified)

001990 Garfinkel, Paul E.; Stancer, Harvey C.; Persad, Emmanuel. Clarke Institute of Psychiatry, 250 College Street, Toronto, Canada, M5T 1R8 **A comparison of haloperidol, lithium carbonate and their combination in the treatment of mania.** Journal of Affective Disorders. 2(4):279-288, 1980.

The comparative efficacy of lithium vs haloperidol vs a combination of the two was studied using 21 bipolar manic patients who required inhospital treatment. The study was conducted in double-blind fashion for 3 weeks. Subjects on haloperidol or on haloperidol and lithium combination were significantly improved after 7 days in comparison with lithium-treated subjects. Despite the relatively small sample size the results suggest that haloperidol is superior to lithium for treating severely acute mania and that while a haloperidol/lithium combination does not result in a significant increase in side-effects, it is not superior to haloperidol alone. 34 references. (Author abstract modified)

001991 Gengo, F.; Timko, J.; D'Antonio, J.; Ramsey, T. A.; Frazer, A.; Mendels, J. Mendels: Affective Diseases Research Unit, V.A. Hospital, University and Woodland Avenues, Philadelphia, PA 19104 **Prediction of dosage of lithium carbonate: use of a standard predictive method.** Journal of Clinical Psychiatry. 41(9):319-321, 1980.

The case history of a patient for whom the nomogram developed by Cooper and associates failed to predict the dose of lithium carbonate needed to attain therapeutic lithium concentrations is reported. The method is based on administering a standard oral dose of lithium carbonate and measuring the plasma concentration of lithium exactly 24 hours later. Data from five patients, representative of 25 studied, are reported in which the daily dose of lithium required to achieve therapeutic concentrations of lithium was predicted accurately from the nomogram. However, in the one case, the patient's predicted maintenance dose was twice as great as that actually required to obtain steady-state plasma concentrations of 1.0mEq/L. It is suggested that lithium concentrations be determined 72 hours and 24 hours before discharge from the hospital to allow the clinician to determine whether steady-state has actually been achieved. 5 references. (Author abstract modified)

001992 Georgotas, A.; Mann, J.; Bush, D.; Gershon, S. New York University Medical Center, Dept. of Psychiatry, New York, NY 10016 **A clinical trial of zimelidine in depression.** Communications in Psychopharmacology. 4(1):71-77, 1980.

The first clinical trial of zimelidine in the United States in depressed outpatients is reported. Ss were 10 depressed outpatients aged 20 to 61. Patients showed significant improvement on all rating scales, and speed of recovery appeared higher than the usual reported for most antidepressants. A dose of 300mg/day was reached in the majority of patients without evidence of toxicity. The most frequent side-effects were dryness of mouth, constipation, and drowsiness, but in no case were these serious enough to require discontinuation of treatment. Zimelidine appears to be a promising antidepressant agent with considerable margin of safety. 10 references. (Author abstract modified)

001993 Giller, Earl, Jr.; Lieb, Julian. Dept. of Psychiatry, V.A. Medical Center, West Haven, CT 06516 **MAO inhibitors and platelet MAO inhibition.** Communications in Psychopharmacology. 4(1):79-82, 1980.

Platelet monoamine oxidase (MAO) inhibition was measured in patients receiving constant doses of phenelzine, isocarboxazid or tranylcypromine for at least 10 days. Thirty-four patients received phenelzine (daily dose range 15 to 90mg), 20 received isocarboxazid (daily dose range 5 to 60mg) and 30 received transylcypromine (daily dose range 10 to 90mg). Platelet MAO inhibition greater than 80% was achieved with phenelzine daily doses of 45mg or more, isocarboxazid daily doses of 20mg or more and tranylcypromine daily doses of 10mg or less. The use of platelet MAO inhibition as an indicator of the therapeutic doses of MAO inhibitors is discussed. 8 references. (Author abstract)

001994 Goldberg, Harold L.; Finnerty, Richard J. Finnerty: West-Ros-Park Mental Health Center, 26 Central Ave., Hyde Park, MA 02136 **Trazodone in the treatment of neurotic depression.** Journal of Clinical Psychiatry. 41(12):430-434, 1980.

The efficacy and safety of trazodone versus amitriptyline and placebo were examined with a double-blind study using 184 patients suffering from neurotic depression. Trazodone was found to be significantly better than placebo on almost every rating scale, particularly on those items or factors related to depression and associated anxiety. Trazodone was superior to amitriptyline in some patients while amitriptyline was only occasionally better than placebo. Significant improvement was noted in trazodone patients within the first 7 days of therapy. Results indicate that trazodone is an effective agent for the relief of symptoms of neurotic depression with associated anxiety, provides a rapid onset of action, and produces minimal side-effects. 9 references. (Author abstract modified)

001995 Goldstein, Burton J.; Claghorn, James L. Dept. of Psychiatry, School of Medicine, University of Miami, Miami, FL 33124 **An overview of seventeen years of experience with dothiepin in the treatment of depression in Europe.** Journal of Clinical Psychiatry. 41(12):64-70, 1980.

The European literature reporting the efficacy, clinical experience and adverse effects with dothiepin is reviewed. In addition, data are reported on the cardiovascular effects of dothiepin, its bioavailability, and plasma levels of dothiepin and its desmethylated metabolite northioden in relation to clinical response. The European clinical experience with dothiepin since 1962 indicates that it is efficacious in the treatment of depression (neurotic, psychotic, and with concomitant anxiety) in doses of 75 to 200mg/day. The side-effects profile is similar to that of the tricyclic antidepressant drugs, with significantly fewer anticholinergic side-effects and less cardiotoxicity than amitriptyline. Current ongoing clinical trials in the United States and their results will define more precisely the efficacy, dosage, and side-effect profile of dothiepin. 32 references.

001996 Goncalves, N.; Wegener, G. Psychiatrisches Krankenhaus Giessen, Licherstrasse 106, D-6300 Giessen, Germany / **Comparison of the effects of lofepramine and mianserin in de-**

pressed patients in a double-blind trial./ Wirkungsvergleich von Lofepramin und Mianserin an depressiven Patienten unter Doppelblind-Bedingungen. International Pharmacopsychiatry. 14(6):310-318, 1979.

The therapeutic efficacy of two newly-developed antidepressants, lofepramine and mianserin, was compared in a double-blind clinical trial in 30 depressed inpatients. During the treatment period of 4 weeks, the depressive symptoms assessed by the Hamilton Rating Scale for Depression decreased in both groups. In this trial, a stronger influence of lofepramine on the factor demonstrated ($p = .08$). In addition, lofepramine showed a significantly better reduction of anxious reactions than mianserin (p less than .01). Concerning tolerance, no difference between the two drugs were observed. 13 references. (Author abstract)

001997 Guensberger, E.; Molcan, J. Psychiatric Clinic, Mickiewiczova 13, 884 21 Bratislava, Czechoslovakia **Is it possible to set up any rules for a comprehensive treatment of depressive states?** Activitas Nervosa Superior. 22(3):173-174, 1980.

Considerations of goals and strategies for the treatment of depressive states are offered. Topics discussed include: 1) the fact that the influence of neuroleptics is both anxiolytic and antidepressive; 2) prediction of the periodicity of depressive disorders, and prophylactic implications thereof; 3) alteration of treatment when an antidepressant drug fails; 4) tolerance to neuroleptics; 5) the reliability of diagnosis of depressive states; and 6) prevention and treatment of chronic depressive states. 6 references.

001998 Guerrini, Antonio; Corbetta, Giuseppe; Legnani, Giorgio. Corbetta: Icpharma, Milano, Italy **/The use of viloxazine in hospitalized depressed patients: random comparison with imipramine in a double-blind trial./** L'uso della viloxazina nei pazienti depressi ospedalizzati: confronto randomizzato in doppia cecita' verso imipramina. Rivista di Psichiatria. 15(2):317-325, 1980.

The use of viloxazine in the treatment of hospitalized depressed patients was studied. Thirty patients suffering from endogenous, reactive, or neurotic depression were administered viloxazine and imipramine in a double-blind study. Subjects' depressive symptoms were measured with the Hamilton Rating Scale. Results indicate that both drugs produced a statistically significant improvement as early as the seventh day of treatment. A side-effects checklist showed no significant difference between the two drugs, but patients treated with viloxazine experienced less anticholinergic side-effects. Upper gastrointestinal side-effects were absent in the viloxazine group. 26 references. (Journal abstract modified)

001999 Haller, Christian; Senon, Jean-Louis; Girard, Marie Benedicte; Seine, Raymonde. Pavillon Toulouse, Centre Hospitalier Specialise de la Vienne, Hopital la Mileterie, F-86021 Poitiers, France **/The importance of amineptine in the treatment of nonpsychotic depressive states in the elderly./** Interet de l'amineptine dans le traitement des etats depressifs non psychotiques chez les personnes agees. Psychologie Medicale. 12(4):941-948, 1980.

The effect of amineptine, a new antidepressant drug, was studied in 25 elderly Ss. The drug was administered in 100mg doses twice daily, and the patients were seen 1, 2, and 3 months after the initial consultation. Amineptine was found to cause side-effects only rarely, and good results were reported in 73% of the cases studied. 51 references. (Journal abstract modified)

002000 Hanus, H.; Zapletalek, M.; Kindernayova, H.; Kucerova, H. Psychiatric Clinic, Medical Faculty, 500 36 Hradec Kralove, Czechoslovakia **Clinical experience with lithium carbonicum retard in psychiatry.** Activitas Nervosa Superior. 22(3):175, 1980.

An open clinical trial of lithium carbonicum retard in the treatment of depressive disorders in 26 patients is described. A control group of 16 patients with similar diagnoses (manic melancholic psychosis or periodical endogenous depression) received lithium carbonicum (nonretarded form) three times daily for 70 days. Side-effects, especially diarrhea and tremor were of greater intensity in patients using the retarded form of lithium carbonate. The clinical course of the psychosis was identical in the two groups.

002001 Hassanyeh, F.; Davison, K. Dept. of Psychiatry, University of Newcastle upon Tyne, Newcastle upon Tyne, England **Bipolar affective psychosis with onset before age 16 years: report of 10 cases.** British Journal of Psychiatry. 137(December):530-539, 1980.

Five male and five adolescent female patients with bipolar psychosis beginning before the age of 16 years, (mean age 14.1 years) are described. Difficulties in diagnosis in this age group are discussed and background factors of possible etiological importance are analyzed. Lithium therapy was effective in six out of seven patients. 22 references. (Author abstract modified)

002002 Hrdina, Pavel D.; Lapierre, Yvon D. Dept. of Pharmacology, University of Ottawa, 275 Nicholas St., Ottawa, Ontario K1N 9A9, Canada **Clinical response, plasma levels and pharmacokinetics of desipramine in depressed in-patients.** Progress in Neuro-Psychopharmacology. 4(6):591-600, 1980.

Plasma drug levels and Hamilton Depression Rating Scale (HDRS) scores were determined in seven patients with endogenous depression treated with desipramine (DMI) (1mg/kg twice daily for 21 days). DMI had a beneficial effect in five patients, which was fully evident within 1 week of treatment. The maximum plasma concentration after a single dose ranged from 19 to 179ng/m1, and the mean steady-state concentration ranged from 65 to 240ng/mg. Plasma levels of DMI were not significantly correlated with HDRS scores, but a plot of plasma levels and amelioration scores at the end of treatment suggested a curvilinear relationship. 30 references. (Author abstract modified)

002003 Janowsky, David S.; Risch, Craig; Parker, Donalu; Hey, Leighton; Judd, Lewis. Veterans Administration Medical Center, San Diego, CA **Increased vulnerability to cholinergic stimulation in affective-disorder patients.** Psychopharmacology Bulletin. 16(4):29-31, 1980.

The possibility that affective-disorder patients may be relatively more sensitive to the effects of physostigmine than other psychiatric patients was explored. Ss were 17 affective disorder patients and 20 patients with other diagnoses. Physostigmine was shown to cause a loss in energy, as well as negative affect, including depressed mood. Furthermore, affective disorder patients appeared relatively more vulnerable to the cholinergic effects of physostigmine with respect to development of behavioral inhibition, negative affect, and exaggerated prolactin responses. Theoretical, diagnostic, and treatment implications are discussed. 9 references.

002004 Jansen, W.; Bruckner, G. W.; Gammel, G. Sebastian Spital, Veilhofstrasse 34, D-8500 Nurnberg, West Germany **Evaluation of nomifensine in the treatment of geriatric depression using psychometric tests and plasma level controls.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1049-1053).

Evidence from a placebo controlled experiment which showed beneficial effects and food tolerability of nomifensine with depressed geriatric patients was replicated in an open study

with 10 patients. Ss were treated for 28 days with 75mg nomifensine daily. Both the clinical picture and psychological tests showed a clear improvement and the drug was again well tolerated. The drug plasma levels were in the same range as those of young volunteers and showed no accumulation. No relationship occurred between therapeutic outcome and plasma levels.

002005 Jefferson, James W.; Greist, John H.; Diamond, Ronald L.; Marcetich, James R. University of Wisconsin Dept. of Psychiatry, Madison, WI 53792 **Lithium and hair loss. (Unpublished paper).** Research Report, NIMH Grant MH-70903, 1979. 3 p.

Case histories of hair loss (alopecia) by patients on lithium carbonate treatment are reviewed, and the results of a study of hair samples from seven patients who had been on lithium at least 12 months (but who had experienced no excessive hair loss) and from six controls are presented. The results show that lithium does accumulate in hair (lithium group, mean hair lithium concentration 1.03mg%; control group, mean hair lithium concentration 0.008mg%). The data suggest that lithium can cause hair loss. That most patients do not experience this problem suggests that these cases may be idiosyncratic and require the interaction of lithium with some other substance or event. Evaluation of thyroid function is mandatory since lithium-induced hypothyroidism may be responsible for hair loss and can easily be corrected by treatment with exogenous thyroid. 2 references.

002006 Kabes, J.; Dostal, T. VUPs, 180 00 Praha 8-Bohnice, Czechoslovakia **/Results of clinical tests of viloxazine (Vivalan ICI): part of a multiclinical study./** Vysledky klinickeho zkouseni viloxazinu (Vivalan ICI): cast multiklinicke studie. Ceskoslovenska Psychiatrie. 75(4):225-231, 1979.

Viloxazine, a new antidepressant, was tested at four clinical centers on 36 patients (15 males, 21 females) hospitalized for serious to acute symptoms of depression. The drug proved to be a highly effective antidepressant during 4 weeks of treatment, even in cases of patients whose previous treatment with classic antidepressants was ineffective. Side-effects were observed only in a small percentage of the patients, and they were very mild. The therapeutic effect of viloxazine was seen surprisingly quickly even in acute cases. 16 references.

002007 Kielholz, P.; Terzani, S. University Psychiatric Clinic, Basle, Switzerland **Infusion therapy in therapy-resistant depression.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1059-1064).

Twenty psychomotor-retarded, therapy-resistant, severe endogenously-depressed patients, 12 of whom were suffering from monopolar and 8 from involutional depression, were treated with a combined neuroleptic/antidepressant (clotiapine and nomifensine) regiment. The combination of a major tranquillizer with an antidepressant raises and prolongs the blood level of the antidepressant allowing the desired effect with the lowest doses and least amount of side-effects. Intravenous infusion therapy makes it possible to avoid passage through the liver and the subsequent metabolism of the antidepressant. Nomifensine had a mood-lightening and drive-increasing effect. It diminished inner emptiness and increased animation, and was well tolerated. The results demonstrate the effectiveness of infusion therapy in this population. The mode of action of nomifensine in this case ranges between that of imipramine and desimipramine.

002008 Kolomaznik, M.; Hronek, J.; Petranova, T.; Jankovych, V.; Karaskova, M.; Kryl, L. Psychiatric Clinic, Medical Faculty, Dukelska trida 69, 301 00 Plzen, Czechoslovakia **Our first experience with clomipramine.** Activitas Nervosa Superior. 22(3):169-170, 1980.

An open trial of clomipramine in a group of 24 depressive inpatients is described. Clomipramine was administered to the majority of patients in slow intravenous infusion in a dose of 25 to 50mg/day for the first 20 days, and then orally in doses of 125mg/day to 150mg/day for 10 days. Before beginning treatment and then 1, 3, 5, 10, 20, and 30 days into treatment, depression was assessed with the rating scales FKD and DVP. After 30 days of treatment, 71% of patients improved. The best response was in patients with a depressive phase of manic-depressive psychosis. Failure was chiefly in cases with a premorbid asthenic or dysthymic personality. The mild side-effects and effects on physiological indices indicate the utility of the drug in hospital and outpatient care.

002009 Laakmann, G. Universitats-Nervenklinik, Nussbaumstrasse 7, D-8000 Munchen 2, West Germany **/Effects of antidepressants on pituitary hormonal secretions in healthy test subjects, neurotic patients, and endogenous depressive patients./** Beeinflussung der Hypophysenvorderlappen-Hormonsekretion durch Antidepressiva bei gesunden Probanden, neurotisch und endogen depressiven Patienten. Nervenarzt. 51(12):725-732, 1980.

The effects of three psychopharmaceuticals (desimipramine, phentolamine, Methysergide) and a placebo on pituitary frontal lobe secretions (luteinizing hormone and thyrotropin secretions) were analyzed for influences on pituitary hormonal secretions in normal, neurotic, and endogenous depressive patients. The study used pharmacological and endocrinological test approaches. Blood samples were taken from test participants at 15 to 30 minute intervals after the dosage was administered. Patients and control group subjects were classified by sex, and females were classified further as premenopausal and postmenopausal. Effects of the treatment are detailed, and implications of the treatment for patients suffering from insulin hypoglycemia are discussed. 61 references. (Journal abstract modified)

002010 Lapierre, Y. D.; Gagnon, A.; Kokkinidis, L. Royal Ottawa Hospital, Ottawa, Ontario, Canada **Rapid recurrence of mania following lithium withdrawal.** Biological Psychiatry. 15(6):859-864, 1980.

Relapse following a lithium withdrawal period of 5 days is reported in four of 20 stabilized, well-documented bipolar manic-depressives. All of them eventually required hospitalization for mania, although two had complied with instructions to resume taking lithium. The possibility of a neurochemical rebound phenomenon is discussed. 23 references. (Author abstract)

002011 Larsen, J. K.; Rafaelsen, O. J. Dept. of Psychiatry, Frederiksberg Hospital, 59, Nordre Fasanvej, DK-2000 Copenhagen F, Denmark **Long-term treatment of depression with isocarboxazide.** Acta Psychiatrica Scandinavica. 62(5):456-463, 1980.

Long-term treatment of a selected group of 20 depressive patients, of whom some 90% were nonresponders to treatment with tricyclic antidepressants, is described. At the followup the median duration of illness was 162 months, and the median duration of treatment was 42 months. Side-effects and interactions were moderate thus legitimating a treatment procedure on which all the patients of the material responded better than on any other antidepressive treatment. It is suggested that treatment with monoamine oxidase inhibitors, like isocarboxazide, should not be left untried in the case of therapy-resistant depression. 19 references. (Author abstract)

002012 Laux, G.; Streichenwein, S. M. Psychiatrisches Landeskrankenhaus, D-7102 Weinsberg/b. Heilbronn, West Germany **Treatment of therapy-resistant depressed patients with i.v. infusions of nomifensine controlled by galvanic skin resistance.** In:

Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1065-1069).

Ten patients suffering from treatment-resistant depression of the endogenous, reactive, psychotic, and neurotic types were treated with i.v. infusions of nomifensine controlled by galvanic skin resistance. Clinical Global Impression, the Hamilton depression scale and a visual analogue scale were completed at intervals throughout the nomifensine treatment. Galvanic skin resistance was measured in order to obtain objective psychophysiological parameters. Nomifensine was well tolerated and produced few side-effects, a result which should be emphasized in comparisons with other tricyclic and tetracyclic antidepressants. The increase in arousal level was objectively and subjectively well demonstrated, while amelioration of mood was not as clearly seen through the 7-day treatment with 50mg and 100mg dosages. 12 references.

002013 Loeb, C.; Roccatagliata, G.; Besio, G. Clinica Neurologica, Universidad de Genova, Genova, Italy **/Variations in urinary excretion of 3-methoxy-4-hydroxyphenylglycol sulfate in depressive conditions./** Variaciones del nivel urinario de M.H.P.G. en las depresiones. In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 555-562).

Variations in urinary excretion of 3-methoxy-4-hydroxyphenylglycol sulfate (MHPG) of 34 depressive patients were evaluated for a period of 10 days. Results indicate a significant correlation between urinary MHPG levels and therapeutic results, particularly following treatment with monoamine oxidase inhibitors, tricyclic antidepressants, and trazodone. Lower levels of MHPG were found in involutional depressions. 23 references. (Author abstract modified)

002014 Loo, H.; Benyacoub, A. K.; Rovei, V.; Altamura, C. A.; Vadrot, M.; Morselli, P. L. Service Hospitalo-Universitaire de Sante Mentale et de Therapeutique, Rue Cabanis, F-75674 Paris Cedex 14, France **Long-term monitoring of tricyclic antidepressant plasma concentrations.** British Journal of Psychiatry. 137(November):444-451, 1980.

Plasma levels of antidepressant drugs were measured in 17 depressed patients at roughly monthly intervals over followup periods of 3 to 26 months. Good results in seven cases were associated with small fluctuations in level from visit to visit, while big fluctuations were associated with poor outcome. Such fluctuations were probably from poor compliance or drug interaction from self-medication. Severe side-effects and cardiotoxicity were associated with high levels. 28 references. (Author abstract modified)

002015 Loo, H.; Cuche, H. Hopital Sainte-Anne, 1, rue Cabanis, F-75014 Paris Cedex 14, France **/Classification of the antidepressant drugs./** Classification des antidepresseurs. Encephale. 5(5, Suppl.):591-603, 1979.

Three types of classification of the antidepressant drugs are considered (chemical, mechanism of action, and therapeutic spectrum). The standard division is between the tricyclic antidepressants and the chemically heterogeneous MAOIs. Many other compounds can be included among the antidepressants, and chemical structures of several drugs are illustrated. In regard to the mechanism of action, there are the antidepressants which act selectively upon serotonin and those which act more particularly upon noradrenaline. Dopamine may be involved in certain depressive syndromes and other systems may have a role, such as electrolyte systems and cell permeability. A third type of classification refers to the therapeutic spectrum of the drug. There are the sedative antidepressants, active in agitated depression and the stimulant antidepressants which are active in retarded depression. 30 references. (Journal abstract modified)

002016 Loo, H.; Zarifian, E.; Wirth, J. F.; Deniker, P. Service Hospitalo-Universitaire de Sante Mentale et de Therapeutique, Hopital Sainte-Anne, 1, rue Cabanis, Paris 14, France **/Open study of L-5HTP in melancholic depressed patients over 50 years of age./** Etude ouverte du L.5-H.T.P. chez des deprimes melancoliques de plus de 50 ans. Encephale. 6(3):241-246, 1980.

A trial on the antidepressive activity of L-5-hydroxytryptophan (L-5HTP) is reported in a homogeneous clinical population of melancholic patients over 50 years of age. The results are inferior to those obtained with other antidepressant therapies. They do not verify that L-5HTP has an antidepressive action in elderly people. The possibility that the compound may be useful in some varieties of depression should still, however, be considered. 16 references. (Journal abstract modified)

002017 Mann, John; Peselow, Eric D.; Snyderman, Selma; Gershon, Samuel. Payne Whitney Clinic, New York Hospital-Cornell Medical Center, 525 East 68th St., New York, NY 10021 **D-Phenylalanine in endogenous depression.** American Journal of Psychiatry. 137(12):1611-1612, 1980.

The clinical effectiveness of D-phenylalanine at the reported effective dose ranges in endogenously-depressed patients who had previously responded to other treatments was evaluated. The maximum daily dose range was 200 to 600mg/day of D-phenylalanine with a mean of 350mg/day reached in the third week. These dosages had absolutely no effect on plasma phenylalanine and tyrosine blood levels in the two patients who responded and six who did not respond. This would suggest that either phenylalanine and tyrosine blood levels have nothing to do with clinical response or that phenylalanine's effect in the two out of eleven patients who responded was nothing more than a placebo effect. Thus, no evidence is found in the study for the antidepressant effect of D-phenylalanine in the dosages reported in the literature. 11 references.

002018 Martin, Jose L.; Spatz, Hans; Abdala, Norberto E.; Basombrio, Julio. Centro de Psicologia Medica San Martin de Tours y Laboratorio Psiquiatria Biologica, Castex 3293, Buenos Aires, Argentina **/Clinical, biochemical, and psychopharmacological correlations in patients with depressive symptomatology./** Correlato clinico, bioquimico y psicofarmacologico en pacientes con sintomatologia depresiva. Acta Psiquiatrica y Psicologica de America Latina. 26(1):13-25, 1980.

Physiological correlations in depressed patients were studied. The 41 subjects were divided into three groups. Group A demonstrated decreased phenethylamine (PEA) and 3-methoxy-4-hydroxyphenylethylglycol (MHPG) levels; group B showed decreased PEA and normal MHPG levels; and group C evidenced normal levels of both compounds. The three groups were administered five tricyclic antidepressant drugs. Results show that: group A responded favorably to imipramine, desipramine, and nortriptyline; group B responded favorably to chlorimipramine and amitriptyline; group C did not respond to any of the antidepressants, and only psychotherapeutic treatment combined with anxiolytics led to improvement for these patients. 36 references. (Journal abstract modified)

002019 Molcan, J. PK, Mickiewiczova 13, 800 00 Bratislava, Czechoslovakia **/Innovations in treatment with antidepressants./** Novinky v liecbe antidepresivami. Ceskoslovenska Psychiatrie. 76(2):73-77, 1980.

Professional literature dealing with the use of antidepressants in psychiatry is surveyed. Emphasis is placed on studies calling for correlation of the evaluation of the therapeutic effect and

the changes of the serum level of the antidepressant. A list of new drugs used for treatment of drug-resistant depressions is presented (viloxazine, clomipramine, dosulepine, impavido, doxepine, etc.). New data on side-effects and complications of therapy involving the use of antidepressants are emphasized. In one study, amitriptyline was found to inhibit ejaculation completely; sexual activity returned to normal when the drug was discontinued, however. 46 references. (Author abstract modified)

002020 Molcan, J.; Caplova, T.; Konikova, M.; Korinkova, V.; Novotny, V.; Wajdickova, K. Psychiatric Clinic, University of Bratislava, Bratislava, Czechoslovakia **/Large doses of dibenzepine Noveril in the treatment of depressive states./** Dibenzepin (Noveril) in hohen Dosen bei der Behandlung der Depressionen. Agressologie. 20(D):307-309, 1979.

The effects of large doses of the antidepressant dibenzepin Noveril were studied in a group of 20 patients suffering from endogenous depression. Subjects were 14 women and six men with a mean age of 48 years, who were treated with Noveril over a mean period of 9 weeks. The nature and severity of each depressive condition was evaluated from a diagnostic point of view. The principal criteria used to determine changes in the psychopathological state were changes of mood, changes in psychomotor activity, thinking capacity, self-assessment, suicidal tendencies, and sleep. Particular attention was paid to the rhythmic aspect of the condition and the occurrence of side effects. An improvement was generally obtained in the third week after the start of treatment. A slight stepwise improvement was obtained in the period of up to 8 weeks, after which there was little further change. The pros and cons of administering high doses rather than medium doses are discussed. 8 references. (Journal abstract modified)

002021 Nahunek, K.; Rysanek, R.; Svestka, J.; Ceskova, E. Psychiatric Clinic UJEP, Jihlavaska 100, 657 15 Brno-Bohunice, Czechoslovakia **Clinical trial of pyrazidol in endogenous depressive states.** Activitas Nervosa Superior. 22(3):170-171, 1980.

A clinical trial of pyrazidol in 63 patients with endogenous depressive disorders is described. Twenty-four of these patients suffered in addition from various somatic illnesses, most frequently ischemic heart disease, and arterial hypertension. Pyrazidol was administered orally in daily doses of 75mg to 600mg. The mean maximum dose was 314mg per day; the mean length of treatment was 21 days. Results were assessed with the rating scales FKD and VP at 7-day intervals. Results indicate that pyrazidol is an effective antidepressant, especially for mild forms of endogenous depression, good tolerance, and low frequency and intensity of side-effects, particularly cardiovascular side-effects. Good results were achieved also in elderly patients, in patients with an additional somatic illness, and in some patients refractory to other antidepressants. 1 reference.

002022 Noordhuizen, G. J. M. Middelweg 28, 2242 BL Wassenaar, The Netherlands **A new dosage schedule for pimozide in the acute stabilization and maintenance treatment of psychosis.** Acta Psychiatrica Belgica. 80(3):329-340, 1980.

Twenty-four psychotic patients' treatment with pimozide was assessed. The study was conducted in three stages and lasted approximately 2 months. The first stage involved the initiation of the pimozide treatment; the second stage concerned finding the patient's optimum daily dose; and the third stage involved maintaining this therapy for 4 weeks. A daily record was kept of dosage, other medication taken, and side-effects. The psychiatric state of the patients was evaluated through the Brief Psychiatric Rating Scale and the Discharge Readiness Questionnaire. At the end of the study, 16 patients were ready to be discharged. It is concluded that rapidly instituting an individual maintenance dose of pimozide appears useful for the social rehabilitation of psychotic patients. 4 references. (Journal abstract modified)

002023 Orth, J. P.; Braccini, T.; Krebs, B. P.; Darcourt, G. Darcourt: Service de Psychiatrie et de Psychologie medicale, Hopital Pasteur, F-06031 Nice Cedex, France **/Psychotropic action of thyrotropin releasing hormone./** L'action psychotrope de la T.R.H. Encephale. 5(4):375-394, 1979.

The psychotropic action of thyrotropin releasing hormone (TRH) was studied in a double-blind trial. In the first trial, 14 Ss received three perfusions of placebo, and 15 received three perfusions of 200mcg TRH; in the second trial, 5 Ss received three perfusions of 1200mcg TRH during the first 3 days and placebo the following 3 days, and 5 other Ss received the inverse. Results indicate no antidepressive effect, but an anxiety reaction was seen with the 1200mcg dosage. Study of the basic level of T3, T4, TSH and prolactin corroborated the normality of the biological evaluation in depressed Ss. No difference in hormonal response under TRH was established among different types of depression. Prolactin response was higher among Ss for whom TRH was the more distressing. 42 references. (Journal abstract modified)

002024 Ostrow, David G.; Davis, John M. Dept. of Psychiatry, Michael Reese Hospital, Chicago, IL 60616 **Lithium transport studies in affective disorders.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1132-1136).

Papers presented at a symposium on lithium ion transport in affective illness are summarized. The first paper reviewed evidence supporting the schema of transport and the relative contribution of each pathway to maintenance of the lithium ratio. The second reported use of sophisticated genetic strategy to unravel the genetic control of biochemical and physiological parameters, and a third explored possible clinical relevancy of variations in the level of lithium efflux from red blood cells in affective disorders. Another focused on the physiology of various types of abnormalities of transport found in selected manic-depressive patients, and the final paper presents findings from a study of lithium ion transports in cultured cells: mouse neuroblastoma and glioma cells. 7 references.

002025 Papezova, H.; Kabes, J.; Balon, R. Institute of Psychiatry, 181 03 Prague 8, Czechoslovakia **Profile of the antidepressant action of nomifensine.** Activitas Nervosa Superior. 22(3):167-168, 1980.

An open clinical trial of the antidepressant action of nomifensine, in which the therapeutic results of nomifensine were evaluated in 32 depressive patients is described. The intensity of depressive symptomatology was evaluated twice a week by the attending physician with the Hamilton rating scale and clinical global assessment. All spontaneously declared side-effects and corresponding objective findings were registered at the same intervals. Nomifensine was found to have very good antidepressant effects, rapid onset of action, and minimal incidence of side effects. 6 references.

002026 Petrie, William M.; Wilson, William H.; Ban, Thomas A.; Guy, William; Schaffer, J. David. Tennessee Neuropsychiatric Institute, Clinical Research Service, 1501 Murfreesboro Road, Nashville, TN 37217 **Mianserin: determination of therapeutic dose range.** International Pharmacopsychiatry. 15(2):111-117, 1980.

In a 6-week open-comparative trial to determine optimal therapeutic dose range, 12 depressed inpatients were sequentially assigned to one of three dose ranges (60, 90, and 120mg) of minaserin hydrochloride, a tetracyclic piperazinoazepine anti-

depressant with an EEG and clinical activity profile similar to those of amitriptyline. Improvement occurred in depressive symptomatology in all three treatment groups. There was no differential improvement noted in any group; however, the incidence of adverse side-effects was greater in the middle (90mg) and high (120mg) dose ranges. 7 references. (Author abstract modified)

002027 Planche, R. Centre de Medecine Psychologique, Pavillon B, Hopital Saint-Jacques, B.P. 69, F-63003 Clermont-Ferrand Cedex, France **/Maprotiline administered in a single daily 75mg dose in general practice./** La maprotiline 75 mg a dose unique journaliere dans la pratique du medecin generaliste. Psychologie Medicale. 12(9):1949-1963, 1980.

The possibility of treating depressive syndromes on an outpatient basis by administering a single daily dose of maprotiline was studied. A single dosage of 75mg maprotiline was given to 92 patients each evening for periods ranging from 1 to more than 4 months. Forty-four patients received maprotiline alone; 48 patients received maprotiline in various combinations with tranquilizers, neuroleptics, hypnotic drugs, and/or other antidepressant drugs. The results indicate that maprotiline administered in a single daily 75mg dosage in general outpatient practice is an effective and easily managed antidepressant drug. Maprotiline was very effective in cases of anxiety and reactive depression, and somewhat less effective in involutional depression. The drug was effective against sleep disturbances in more than 50% of cases. Tolerance was good in 80% of cases. 76 references. (Journal abstract modified)

002028 Poldinger, W.; Koeppen, D. Kantonal Psychiatrische Klinik, CH-9500 Wil SG, Switzerland **Treatment of anxious-depressed outpatients with a fixed combination (nomifensine/clobazam) in comparison to a monosubstance (doxepine).** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/ North Holland, 1979. 835 p. (p. 1070-1075).

Treatment of anxious depressed outpatients with a fixed combination of nomifensine and the minor tranquilizer, clobazam, was compared to a monosubstance approach using doxepine. Antidepressive and anxiolytic properties were similar in both groups, with a faster onset of global therapeutic action in the first group. There were differences in the incidence of side-effects, especially drowsiness. Clobazam did not cause a comparable incidence of sedative side-effects which were observed more frequently in Ss treated with the monosubstance approach. 7 references.

002029 Porot, M. Clinique Psychiatrique et de Psychologie Medicale, Groupe Hospitalier Saint-Jacques, place Henri Dunant, F-63003 **/Comparative experiment of the antidepressant effects of amineptine and chlorimipramine./** Etude comparative des effets thymo-analeptiques de l'amineptine et de la chlorimipramine. Psychologie Medicale. 11(A):109-110, 1979.

A comparative double-blind clinical study involving 60 patients and lasting 6 weeks was conducted on the antidepressant effects of amineptine (Survector) and of chlorimipramine (Anafrinil). The results show that in most cases, Survector was at least as effective as chlorimipramine. (Journal abstract modified)

002030 Porot, M.; Gerstner, C.; Francois, M.-A. Clinique Psychiatrique et de Psychologie Medicale, B.P. 38, F-63000 Clermont-Ferrand, France **/Antidepressant action of amineptine: controlled double-blind study./** Activite antidepressive de l'amineptine: etude controlee a double insu. Therapie. 34(6):733-742, 1979.

The antidepressive properties of amineptine were compared to those of clomipramine. A sample of 56 patients, suffering from neurotic, reactive, and melancholic depression or chronic psychosis, was administered a double-blind test. Each subject received an average of either 200mg/day of amineptine or 100mg/ day of clomipramine over a period of 6 weeks. Clinical results were assessed using the Hamilton Depression Scale. Results indicate no significant statistical difference between the two drugs in their general effects on weight, heartrate, blood pressure, and ocular tone. The results of the Hamilton Scale show that both drugs have a kinetic, activity-inducing action as opposed to that of sedative antidepressants. Tolerance of amineptine was superior to that of clomipramine regarding anticholinergic action. (Journal abstract modified)

002031 Post, Robert M. Biological Psychiatry Branch, National Institute of Mental Health, Bethesda, MD **Sensitization and oscillation following repeated stimulation: relationship to affective illness and its treatment with lithium and carbamazepine.** Psychopharmacology Bulletin. 16(4):50-52, 1980.

Two temporal asymmetries, the development of both sensitization and oscillation, are reviewed as they occur in a variety of paradigms involving repeated, intermittent electrical, pharmacological, or psychological stimulation. The sensitization/oscillation phenomena of amygdala kindling, lidocaine kindling, cocaine hyperactivity, and levodopa dyskinesia are described and related to various sensitization and rapid cycling effects occurring in manic-depressive illness. The sensitization/oscillation perspective has led to alternative therapeutic approaches to rapid cycling affective illness, including the first double-blind, controlled clinical trials of carbamazepine (a temporal lobe-limbic anticonvulsant) in primary major affective illness. 10 references.

002032 Ravizza, Luigi. Dipto. di Psychiatria, Fac. di Medicina, Universita di Torino, Torino, Italy **/Clinical and biochemical data on the action of maprotiline and clomipramine in depressive states (preliminary observation)./** Contributions cliniques et biochimiques sur l'action de la maprotiline et de la clomipramine dans les etats depressifs (observation preliminaire). Psychiatria Clinica. 12(3):164-172, 1979.

The biochemical effects of maprotiline and clomipramine on depressive conditions were studied. Six patients suffering from psychotic depression were treated with 100mg clomipramine daily for 20 days; 11 patients, seven with psychotic depression and four with neurotic depression, were administered 150mg maprotiline daily for 20 days. In both groups, the therapy was continued orally. Results indicate that 17 patients demonstrated remarkable improvement, and there was complete recovery in some cases. The two drugs both acted on the same symptoms. The determination of serotonin in human platelets confirmed the strong inhibition of its reuptake by clomipramine and the absence of reuptake of 5-hydroxytryptamine (5-HT) with maprotiline. A constant and progressive increase of 5-hydroxyindoleacetic acid (5-HIAA) was noted in the clomipramine patients. This increase could be considered a consequence of the increased metabolism of the larger quantity of 5-HT used by the central synapses; the interpretation of 5-HIAA levels in maprotiline patients was more difficult. 18 references. (Journal abstract modified)

002033 Reisby, Niels; Gram, Lars F.; Bech, Per; Sihm, Flemming; Krautwald, Ole; Elley, Jorgen; Ortmann, Jorgen; Christiansen, Johannes. Gram: Dept. of Clinical Pharmacology, Institute of Pharmacology, Odense University, DK-5000 Odense, Denmark **Clomipramine: plasma levels and clinical effects.** Communications in Psychopharmacology. 3(5):341-351, 1979.

The effects of clomipramine (CIP, 150mg/day for 5 weeks) were studied in 32 hospitalized, depressed patients. Scores on

depression rating scales were negatively correlated with plasma drug levels in endogenously depressed patients, but not in patients with reactive/neurotic depressions. Optimal therapeutic effect was obtained when plasma CIP levels were higher than 90 to 100mcg/1 in the endogenous group. Plasma levels of the metabolite desmethylclomipramine (DMCI) were not significantly correlated with depression scores in either patient group. However, adrenergic side-effects (tremor, palpitations, and sweating) increased as the ratio of DMCI to CIP increased. Sleep disturbances were observed in some patients with high plasma CIP levels. 22 references. (Author abstract modified)

002034 Reus, Victor I.; Lake, C. Raymond; Post, Robert M. Dept. of Psychiatry, School of Medicine, University of California, San Francisco, CA 94143 **Effect of piribedil (ET-495) on plasma norepinephrine: relationship to antidepressant response.** Communications in Psychopharmacology. 4(3):207-213, 1980.

Plasma norepinephrine (NE) levels were determined in seven depressed patients treated with piribedil or placebo. Piribedil decreased depressive mood and increased basal resting levels of plasma NE. Ss who showed greater antidepressant response also showed greater decreases in percentage change in NE levels from basal to exercise stress conditions. 32 references. (Author abstract modified)

002035 Robinson, Donald S. Dept. of Pharmacology, Marshall University School of Medicine, Huntington, WV 25701 **Age-related factors affecting antidepressant drug metabolism and clinical response.** In: Nandy, K., Geriatric psychopharmacology. New York, Elsevier/North-Holland, 1979. 277 p. (p. 17-29).

Some of the recent pharmacokinetic, biologic, and clinical data relating to aging and antidepressant drugs are reviewed. There is evidence that biotransformation of the tricyclic antidepressant drugs is slowed in the elderly and significantly modified doses should be employed in these populations. Preliminary evidence on the MAO inhibiting drugs suggests that they may have prticular efficacy in the older patients perhaps due to enhanced MAO activity with advancing age and the intolerance of many elderly patients to tricyclic antidepressants. 32 references.

002036 Ropert, R. Service d'Hygiene Mentale, Paris 8E, France **/Clinical experience with substituted benzamides in French speaking countries./** L'experience clinique des benzamides substituees dans les pays de langue francaise. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 991-996).

The clinical use of benzamides in French-speaking countries is discussed. The two principal subgroups of benzamides can be distinguished from a clinical viewpoint: tiapride and sulpiride. Benzamides are known as the original psychotropes, with multiple potentials, which offer the clinician new therapeutic possibilities, especially in cases of psychosis and depressive conditions. Sulpiride is most widely used but also poses some difficult problems regarding the delimitation of its clinical actions and the appreciation of its position among other psychotropes. 48 references. (Author abstract modified)

002037 Rosenbaum, Alan H.; Maruta, Toshihiko; Duane, Drake D.; Auger, Raymond G.; Martin, Donna K.; Brenengen, Emily E. Mayo Clinic, Rochester, MN 55901 **Tardive dyskinesia in depressed patients: successful therapy with antidepressants and lithium.** Psychosomatics. 21(9):715-719, 1980.

The effects of therapy with antidepressants and lithium on depression in patients with tardive dyskinesia were examined. Nineteen patients with tardive dyskinesia (TD) were treated with tricyclic antidepressant therapy supplemented within 2 to 3 weeks with lithium carbonate. All patients fulfilled the Research Diagnostic Criteria for major depressive disorder, although seven of them denied being dysphoric. The Abnormal Involuntary Movement Scale and the Hamilton Rating Scale were used to measure dyskinesia and depression. Of the 19 patients, 11 (58%) experienced moderate or marked improvement in both dyskinesia and depression. Treatment with a tricyclic antidepressant and lithium may alleviate tardive dyskinesia in patients with depressive symptoms. 26 references. (Author abstract modified)

002038 Rosenbaum, Alan H.; O'Connor, M. Kevin; Duane, Drake D.; Auger, Raymond G. Mayo Clinic, Rochester, MN 59901 **Treatment of tardive dyskinesia in an agitated, depressed patient.** Psychosomatics. 21(9):765-766, 1980.

A case history of a patient who was treated for depression and tardive dyskinesia (TD) with electroconvulsive therapy and maintained on amitriptyline and lithium therapy is reported. The patient's failure to respond to tricyclic antidepressants, together with extreme agitation, prompted the use of electroconvulsive therapy. Following eight treatments which provided relief of her agitated depression and a resolution of the movement disorder, she was started on amitriptyline and lithium carbonate. Six months after dismissal, she had returned to her usual premorbid functioning, except for a slight amount of restlessness each morning. The case illustrates a useful approach to patients with TD and severe depression and suggests the need for further investigation of drugs with anticholinergic action in the treatment and prevention of TD. 20 references.

002039 Rudorfer, Matthew V.; Young, Robert C. Dept. of Psychiatry, Washington University School of Medicine, St. Louis, MO **Plasma desipramine levels after single dosage and at steady state in outpatients.** Communications in Psychopharmacology. 4(3):185-188, 1980.

In 12 young depressed outpatients, plasma desipramine levels after a single oral 50mg dose were highly correlated with plasma levels at a steady-state dose of 150mg/day. A lower correlation was found between steady-state levels and bodyweight. No significant correlation between steady-state drug levels and age was found. 10 references. (Author abstract modified)

002040 Rybakowski, Janusz; Chlopoka-Wozniak, Maria; Kapelski, Zdzislaw; Strzyzewski, Wlodzimierz. Dept. of Psychiatry, Academy of Medicine, ul. Szpitalna 27/33, 60-572, Poznan, Poland **The relative prophylactic efficacy of lithium against manic and depressive recurrences in bipolar patients.** International Pharmacopsychiatry. 15(2):86-90, 1980.

The relative prophylactic efficacy of lithium against manic and depressive recurrences was examined in 61 patients (22 males, 39 females) with bipolar manic-depressive disorders by comparing the number of manic and depressive episodes for each patient during equally long periods before and during lithium treatment. In all the patients, the percentage of depressive episodes during lithium was smaller than that of manic episodes. The better antidepressive than antimanic prophylactic effect of lithium was significant only in male patients, while the reduction of manic episodes during lithium was greater in females. The fraction of patients without depressive episodes on lithium was greater in the male group. The results obtained in this study indicate that lithium is an effective antidepressive prophylactic agent in bipolar patients. Sex differences are also implicated in response to lithium prophylaxis. 15 references. (Author abstract)

002041 Schmid, E. Psychiatrische Universitats-Poliklinikum, Bern, Switzerland **/Outpatient care of depressive patients with mianserin./** Ambulante Behandlung depressiver Patienten mit

Mianserin. Schweizerische Rundschau fur Medizin Praxis. 68:978-980, 1979.

Twenty-nine depressive patients were treated with mianserin on an outpatient basis for 6 to 9 weeks. At the end of this period, patient scores on the Hamilton and Beck-Pichot Assessment tests showed a marked reduction in patient symptoms and complaints. Mianserin's wide range of effectiveness and lack of side-effects are emphasized. (Journal abstract modified)

002042 Shopsin, Baron. Unit for the Study and Treatment of Affective Disorders, New York University Bellevue Hospital Center, New York, NY 10016 **Second generation antidepressants.** Journal of Clinical Psychiatry. 41(12):45-56, 1980.

New antidepressant compounds which have been investigated in recent years, which are unique chemically and which differ from the classic tricyclic monoamine oxidase inhibitors (MAOI), are reviewed. The data, considered collectively and critically evaluated, suggest that many of the newer compounds used investigationally, because of their clinical efficacy, seriously question the involvement of monoamines as being responsible for either the antidepressant effect of the standard psychotropic drugs or as etiopathogenic in the affective disorders. The classic animal screening profiles used for predicting antidepressant drug efficiacy in man do not hold for many of the new antidpressants. It is suggested that the animal/laboratory models need to be revised and reoriented towards finding similar molecules that are devoid of the addling side effects and contraindications of the existing standard tricyclic-MAOI genre. The newer second generation antidepressants are viewed as a hallmark of progress in research and treatment with psychotropic drugs. 58 references. (Author abstract modified)

002043 Shopsin, Baron; Waters, Brent. New York University Medical Center, 550 Fifth Avenue, New York, NY 10016 **The pharmacotherapy of major depressive syndrome. Part 2: Prophylaxis of recurrent depressive illness.** Psychosomatics. 21(8):649-651, 655-656, 1980.

The importance of documenting the present of recurrent depressive illness before placing a patient on maintenance therapy is discussed. The evidence for lithium's effectiveness as prophylactic agent for patients with manic depressive illness is examined and compared with evidence on tricyclic antidepressants and other agents. It is cautioned that the risk of side-effects and of toxicity must be carefully weighed against the possible value of lithium therapy. The Figure, a schematic outline that may be helpful in guiding prophylactic treatment, is presented. 16 references. (Author abstract modified)

002044 Shopsin, Baron; Waters, Brent. New York University Medical Center, 550 Fifth Ave., New York, NY 10016 **The pharmacotherapy of major depressive syndrome. Part 1: Treatment of acute depression.** Psychosomatics. 21(7):542-544, 547-549, 553-556, 1980.

Diagnostic criteria for major depressive syndrome which comprises involutional melancholia, manic-depressive illness, and psychotic depressive reaction are listed as background to a discussion of pharmacotherapy of the syndrome. Guidelines are offered for choosing among the tricyclic antidepressants, monoamine oxidase inhibitors (MAOIs), psychomotor stimulants, lithium, and other agents for these conditions. Beginning with a tricyclic antidepressant is suggested, then proceeding to various combinations of therapy if the tricyclic is ineffective; then to MAOIs; and finally to investigational drugs, including lithium, if all others fail. The relatively lengthy course of an acute depressive episode, it is suggested, allows time to find the most effective drug for each patient. 46 references. (Author abstract modified)

002045 Spriet, Alain. Laboratoire Hoechst, Tour Roussel Nobel Cedex 3, F-92080 Paris La Defense, France **/Cooperative psychiatric study of Alival: preliminary results./** Etude cooperative psychiatrique Alival: resultats preliminaires. Psychologie Medicale. 12(C):33-42, 1980.

Five hundred nine outpatients taking Alival for a month were studied to determine which patients responded best. Detailed files, including information on symptomatology, height and weight, insomnia and Zung scale results, were kept for each patient. Preliminary analysis shows a favorable response to Alival in 72.9% of the patients, particularly regarding depression, insomnia, crying, fatigue, clearness of ideas, confidence in the future, irritability and pleasure in everyday activities. Further analysis is necessary in order to determine which patient types respond best. 7 references. (Journal abstract modified)

002046 Thill, R. Eutherapie, 27, du Pont, F-92200 Neuilly/S/ Seine, France **/First clinical impressions in daily practice./** Premieres impressions cliniques en pratique quotidienne. Psychologie Medicale. 11(A):111-112, 1979.

Clinical impressions of the use of amineptine in daily practice is discussed. All physicians who prescribed the drug seemed to be satisfied with the overall performance of the drug at a dose of 2 tablets a day. However, its effectiveness for melancholic depression is questioned. However, its effect on depressions, which do not prevent the patient from working, is much better. Patients appreciate its rapid action in returning their desire for work and improving their mood. The desire for social reintegration also returns rapidly. It is noted that its effect on mood changes has been comparable to antidepressants used in outpatient therapy. However, its antidepressant effect is somewhat weaker than Anafranil 25 or Tofranil. No positive or negative effects on sleep were observed. It has demonstrated no sedative or anxiogenic action, and a minimum of side-effects.

002047 Timotijevic-Markovic, Ivana. Odsek za depresivna stanja Instituta za mentalno zdravlje, Belgrade, Yugoslavia **/The correlation of catecholamine and adrenergic parameters with drug therapy of neurotic and endogenous depressions./** Promene katecholaminskih i adrenergicnih parametara u korelaciji sa medikamentoznom terapijom kod neuroticnih i endogenih depresija. Psihijatrija Danas. 11(3-4):423-426, 1979.

Biochemical investigations of catecholamine metabolism (determination of urinary excretion of vanillymandelic acid, VMA) and adrenocortical hormones (determination of 17-ketosteroid in urine) were carried out in a group of depressive patients. On the basis of clinical psychiatric criteria, the patients were divided into two groups: group A with the endogenous form of depression and group B with neurotic and depressive states. Biochemical values were followed up from the onset of the disease until the recovery stage and compared with the drug therapy used in the treatment. The comparison showed that biochemical values in the two groups of depressive patients varied and that they agreed with the therapy applied. At the same time, this indicates that biochemical disorders in endogenous depressive conditions develop in higher cerebral structures; while in neurotic and reactive depressive conditions, the lower peripheral structures are primarily affected. The dynamics of the change of biochemical parameters along with the drug therapy leading to improvement of depressive diseases indicates a psychobiological unity of affective disorders. 4 references. (Journal abstract)

002048 Tournilhac, M. Hopital Fontmaure, avenue de Villars, F-63400 Chamalieres (Puy-de-Dome), France **/Treatment of chronic pain with antidepressant drugs./** Traitement des douleurs chroniques par les antidepresseurs. Psychologie Medicale. 11(5):997-1000, 1979.

The analgesic effects of antidepressant drugs such as imipramine, amitriptyline, clomipramine and salbutamol on the chronic pain suffered by 2 patients were studied. Pain was found to be eased to a significant degree or eradicated in 80% of the cases. The analgesic action of these drugs appears to be based on an unknown mechanism. Their analgesic action seems to be different from their antidepressive action. (Journal abstract modified)

002049 Uebelhack, Ralf; Franke, Leonora; Kitzrow, Werner; Seidel, Karl. Nervenklinik des Bereiches Medizin, Humboldt Universitat, Schumannstrasse 20/21, DDR-1040 Berlin, German Democratic Republic **/Phenylalanine levels in endogenous psychoses./** Phenylalaninbelastungen bei endogenen Psychosen. Psychiatrie, Neurologie und Medizinische Psychologie. 32(10):631-633, 1980.

The effects of phenylalanine levels on 65 depressive and psychotic patients were made over a period of 14 days. Patients were kept on a protein-free diet for 24 hours prior to the test. Patients received doses of L-phenylalanine at a rate of 100mg/kg. Blood samples drawn hourly were analyzed for amino acid content. Phenylalanine doses were found to be effective for 48 hours. EEG examinations were given to 29 patients both before and after the test. Four female patients experienced hallucinations during the first 4 hours. No conclusions were reached regarding the relation of deviant phenylalanine levels to psychoses. Six patients experienced a remission of psychotic symptoms beginning 2 to 3 weeks after the experiment. A decrease in psychotic symptomatology was seen in 16 depressive patients. 11 references.

002050 Van Amerongen, P. Service de Neuro-Psychiatrie, F-78100 Hopital de Saint-Germain-en-Laye, France **/Double-blind controlled experiment: amineptine versus amitriptyline using the Hamilton depression rating scale./** Etude controlee a double insu: amineptine versus amitriptyline utilisation de l'echelle de depression d'Hamilton. Psychologie Medicale. 11(A):73-79, 1979.

A double-blind experiment involving 26 patients given amineptine, and 25 patients given amitriptyline for a 6-week duration is presented. Of the 51 patients 32 had previously been given antidepressants, with no noticeable results in half of the cases. The results were assessed by the 26 criteria of the Hamilton depression rating scale. It was found that amineptine has an antidepressant action, rapid in onset and progressively increasing throughout the period of treatment. The results analyzed with the various items on the scale show that amineptine acts upon three essential elements of depression: abnormality of mood, psychomotor retardation, psychic and somatic anxiety. However, it should be noted that most of the patients were also receiving an anxiolytic drug. Amineptine acted more rapidly than amitriptyline, notably upon depressive moods, psychomotor retardation, anxiety and gastrointestinal somatic symptoms. The acceptability of amineptine was found to be excellent in 77% of patients as against 60% of patients given amitriptyline. (Journal abstract modified)

002051 Vauterin, C. Service de Psychiatrie, Hopital des Armees Scrives, F-59000 Lille, France **/Double-blind controlled study: amineptine versus trimipramine./** Etude controlee a double insu: amineptine versus trimeprimine. Psychologie Medicale. 11(A):81-85, 1979.

A double-blind study of amineptine and trimeprimine was conducted over a 6-week period on 50 outpatients with depressive symptoms. A profile of amineptine's antidepressant action was revealed. Trimeprimine was found to have an anxiolytic and sedative action whereas amineptine tended to be more of a stimulant. Both groups had the same proportion (52%) of good results. However, amineptine, showed a smaller rate of total failure and its effect on depression, psychomotor retardation and libido appeared to be more satisfactory. Moreover, amineptine seemed to be devoid of anticholinergic side-effects. (Journal abstract)

002052 Welner, Amos; Welner, Zila; Robins, Eli. Robins: Dept. of Psychiatry, Washington University School of Medicine, 4940 Audubon Ave., St. Louis, MO 63110 **Effect of tricyclic antidepressants on individual symptoms.** Journal of Clinical Psychiatry. 41(9):306-309, 1980.

Improvement of individual depressive symptoms in patients with depression was compared between those treated with tricyclic antidepressants (TAD) and those treated with other psychoactive drugs or with placebo. In the majority of comparisons, patients did not improve significantly more with TAD than with other drugs or placebo. These findings indicate that TAD are not useful in the treatment of most patients with depression. It is suggested, however, that a minority of patients with depression may benefit by treatment with TAD. 60 references. (Author abstract)

002053 Wolpert, Edward A.; Wolpert, Gloria Y.; Holinger, Paul C.; Preodor, Diane. Institute for Psychosomatic and Psychiatric Research and Training, Michael Reese Hospital and Medical Center, Chicago, IL 60616 **A ten-year follow-up of lithium carbonate treatment of manic depressive illness: preliminary results.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1111-1116).

A 10-year followup study was conducted of 74 patients treated with lithium carbonate for manic-depressive or unipolar depression or other psychoses. Physician evaluations indicated that 51 of the Ss responded positively to treatment, and that 53 suffered some recurrences. The average frequency of episodes decreased significantly for the total patient group and for each of the diagnostic categories. Side-effects were noted in 48 Ss, and 7 Ss had to discontinue treatment for this reason. Interviews with 35 patients indicated that their view of treatment differs markedly from that of the therapist. Therapists err in not taking the physiology seriously, by not responding to prodromal warnings of changes in activity levels with flexible dosage, or in not taking the psychology seriously and helping patients to resolve key conflicts. The need to view manic-depressive illness as an actual neurosis, in which both psychological and physiologic factors are important, is stressed. 12 references. (Author abstract modified)

002054 Zapletalek, M.; Kindernayova, H.; Groh, J. Psychiatric Clinic, 500 36 Hradec Kralove, Czechoslovakia **Effect of lithium on potassium and calcium in serum, erythocytes and in urine.** Activitas Nervosa Superior. 22(3):175-176, 1980.

The effects of lithium on potassium and calcium in serum, erythocytes and in urine were investigated in 31 depressed patients. Plasma potassium increased significantly after lithium and sodium decreased. In red blood cells, the K-level increased after lithium and the Na level increased. After discontinuation of lithium, the plasma potassium level decreased, the sodium level increased, and the calcium level decreased. In red blood cells, lithium reduced the K-level and increased the Na level. 4 references.

002055 Zapletalek, M.; Libiger, J.; Tuma, I.; Kasparkova, E. Psychiatric Clinic, 500 36 Hradec Kralove, Czechoslovakia **Pyrazidol in the treatment of depressions.** Activitas Nervosa Superior. 22(3):171-172, 1980.

An open clinical trial of pyrazidol, a tetracyclic antidepressant compound, in the treatment of 23 patients with depressive

syndromes was reported. The sample consisted of 14 endogenous and involutional depressions, four organic and symptomatic depressions, and five reactive and neurotic depressions. The rapid onset of effect and marked influence on depressive mood, retardation, hypochondriasis, and somatic general symptoms agree with reports in the literature. At the beginning of application, restlessness and tension which required medication were noted, particularly in women. In the course of treatment, however, anxiety decreased. The variety and frequency of side-effects appear to be considerable.

002056 Zapletalek, M.; Zbytovsky, J.; Kudrnova, K. Psychiatric Clinic, 500 36 Hradec Kralove, Czechoslovakia **Infusion of maprotilin and clomipramine and their combination in the treatment of depression.** Activitas Nervosa Superior. 22(3):168-169, 1980.

The speed of onset and the magnitude of the antidepressant effect of maprotilin, clomipramine, and the combination of maprotiline and clomipramine in drop infusion were assessed. Maprotiline was given in i.v. infusions of 50mg for at least 10 days to 13 depressed patients; clomipramine was given in the same way to 17 depressed patients. Eight patients received a mixed infusion of maprotiline and clomipramine under identical conditions. Clomipramine was found to have a more rapid onset of therapeutic effect and a generally greater antidepressant effect. The mixture of the two drugs had a more balanced antidepressant effect, and appeared to combine the merits of the individual drugs. Infusion of the two drugs was generally well tolerated and produced no persisting undesired side-effects. 3 references.

002057 Zerbi, F.; Corona, G. L.; Fenoglio, L.; Tosca, P. Dept. of Clinical Neurology, University of Pavia, Pavia, Italy **Blood level of amitriptyline, nortriptyline, noradrenaline, serotonin and therapeutic response.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 975-979).

The correlation between plasma concentrations of amitriptyline (AMT) and nortriptyline, (NT) clinical response and side-effects in 102 depressed female inpatients treated with 50mg, 100mg, or 150mg/day dosages of amitriptyline i.m. for 4 weeks was investigated. The clinical state of the patients was evaluated using the Hamilton rating scale and the side-effects were evaluated using the Braithwaite questionnaire. Statistical analysis demonstrated the existence of significant correlations between some plasma concentrations and the values of Hamilton's test for 50mg and 100mg doses. A significant correlation was found between side-effects and the ratio AMT/NT for the 50mg dosage and between Hamilton's values and the side-effects for 50mg and 100mg dosages. 18 references. (Author abstract modified)

002058 Zerbi, F.; Tosca, P.; Fenoglio, L.; Caronna, P.; Bezzi, G. Clinica Neurologica, Universita di Pavia, Pavia, Italy /**Motor learning abilities in subjects treated with lithium salts and tricyclic antidepressants.**/ Apprentissage d'habiletes motrices chez des sujets traites avec sels de lithium et tricycliques. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 933-938).

The effects of lithium salts on motoricity in depressed patients were compared to those of tricyclics. The MAST test and retest which examines motoricity was administered to two groups: 15 depressed patients treated with lithium and 15 depressed patients treated with amitriptyline. The effects of each drug were determined through the change between the test and the retest. Results indicate that in five separate tests the patients' motor abilities improved or deteriorated depending upon experimental conditions. It is concluded that test findings could not be classified as results of the medication or of the illness, due to improper control situations. 8 references. (Author abstract modified)

10 DRUG TRIALS IN NEUROSES

002059 Barnes, Roy J.; Guarino, Richard A. Clark Tower Bldg., 5100 Poplar Ave., Suite 3108, Memphis, TN 38137 **Single- versus multiple-dose comparative trial of desipramine hydrochloride: a double-placebo method.** Journal of Clinical Pharmacology. 20(11-12):681-688, 1980.

A double placebo design was used to compare the efficacy of single and multiple daily dose regimens for depressed neurotic patients receiving 75, 100, or 150 mg/day desipramine hydrochloride. Clinical observations, electrocorticograms, laboratory tests, and vital signs indicated that the two regimens were equally safe and effective. Results also demonstrated the adaptibility of the double placebo design to comparisons of drugs that vary in potency and duration of action. 15 references.

002060 Bernadt, M. W.; Silverstone, T.; Singleton, W. Silverstone: German Hospital, Ritson Road, London E8 1DF, England **Behavioural and subjective effects of beta-adrenergic blockade in phobic subjects.** British Journal of Psychiatry. 137(November):452-457, 1980.

The suggestion that reversal of stress-induced tachycardia by beta-adrenergic blockade is of benefit in the treatment of phobia was tested in a double-blind cross-over trial. A group of 22 female volunteers with spider or snake phobias were exposed to their phobic object 1.5 hr after administration of either tolamolol 200mg, diazepam 10mg, or placebo. Although tolamolol abolished the stress-induced tachycardia, it had no beneficial behavioral or subjective effects. In contrast, diazepam, which had no significant effect on heartrate, improved behavioral performance. Subjective measures were more influenced by order effect than by medication. 35 references. (Author abstract modified)

002061 Berthon, Gerald; Viaud, Bernard. 29, Avenue Carnot, F-33000 Bordeaux, France /**The interest of the stimulating effect of carpipramine in psychosomatic medicine.**/ Interet de l'action stimulante du prazinil en medecine psychosomatique. Psychologie Medicale. 12(12):2663-2683, 1980.

A study was conducted to determine the best indications for the use of carpipramine in psychosomatic patients. A longitudinal study was made of 84 Ss, mostly female, between the ages of 12 and 72. The optimal individual dose of carpipramine (100 to 300mg/day) was administered over variable time spans, ranging from several weeks to several months. The medication was generally well tolerated, and side-effects were minimal. Results show that in 53.5% of the Ss, symptoms disappeared totally, in 31% there was significant improvement, 7% improved somewhat, and 8.5% did not improve at all. 34 references.

002062 Beumont, P. J. V.; Abraham, Suzanne F.; Turtle, J. R. Dept. of Psychiatry, University of Sydney, Sydney, Australia 2006 **Body weight and responses to LHRH infusion in anorexia nervosa.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 615-619).

Pituitary gonadotrophin (LH and FSH) responses to LH-FSH releasing hormone (LHRH) infusions are reported for nine patients with anorexia nervosa. In five instances, repeated infusions were performed on the same patient in order to study the effect of weight gain. In three other cases, repeated infusions were performed to examine the effect of bromergocryptine, a dopamine agonist that depresses prolactin levels. The results show that responses are depressed in patients at low weight and are restored to normal or supranormal values once weight is regained. 8 references.

002063 Bianchi, Geoffrey. 142 Ferry Ave., Surfers Paradise, Queensland 4217, Australia **Rational use of benzodiazepines for anxiety and insomnia.** Current Therapeutics. 21(11):47-48, 50, 52-53, 1980.

The rational use of benzodiazepines in cases of anxiety and insomnia are discussed. The procedure involves diagnosing the underlying syndrome of the anxious patient or poor sleeper. If it is neither a depressive illness nor a phobic anxiety a long-acting benzodiazepine (e.g., diazepam) taken at night may be of value. A short-acting benzodiazepine (e.g., oxazepam, lorazepam, or temazepam) is the preferred hypnotic if there is no daytime anxiety, if the patient is elderly, or if even mild daytime sedation puts the patient at-risk of an accident. Problems in usage such as drug dependence, side-effects, and interaction with other drugs are considered.

002064 Bolelоucky, Z.; Boriova, M.; Synkova, J.; Nahunek, K. Psychiatric Clinic LF UJEP, Jihlavska 102, 657 15 Brno 2-Bohunice, Czechoslovakia **The use of clorotepine and diazepam in a complex therapy of neuroses (controlled comparison).** Activitas Nervosa Superior. 22(3):180-181, 1980.

A controlled comparison of the effects of clorotepine and diazepam in the treatment of neurosis is described. Thirty-three neurotic inpatients received successively clorotepine, diazepam, and placebo for a period of 10 days in a Latin square design. Before and after treatment with each drug, the patients were examined clinically and with the rating scales Hamilton-A and BOPS (Free and Overall), and self-rating questionnaires SCL-90 and Abramson Jarvik. Clorotepine was found to have specific effects on some of the SCL-90 items. 1 reference.

002065 Bornstein, S. Hopital Psychiatrique de la Maison Blanche, F-93300 Neuilly-Sur-Marne, France **/Comparative cross-study on the effects of amineptine and maprotiline./** Etude comparative en traitement croise de l'activite de l'amineptine et de la maprotiline. Psychologie Medicale. 11(A):67-72, 1979.

Comparative effects of amineptine and maprotiline were studied in 70 outpatients. Amineptine was found to be superior to the antidepressant maprotiline. This superiority was found to be quite marked in the treatment of neurotic, reactive depressions and depressions resulting from exhaustion. The two drugs were found to have similar effects in endogenous depression. Patients treated with amineptine felt better in an earlier stage than patients treated with maprotiline. In no case was the dosage increased and patients were taken off the drug progressively without signs of dependence. (Journal abstract modified)

002066 Coche, B. Maison Notre-Dame, 29, rue Antonin Perrin, F-69100 Villeurbanne, France **/Inhibition and apathy: treatment with Survector./** Inhibition et apragmatisme: approche therapeutique par le Survector. Psychologie Medicale. 11(A):97-103, 1979.

The effect of Survector on inhibition and apathy was studied in 58 neurotic or psychotic patients treated with 200mg amineptine in two doses, (morning and noon) for varying periods of time (between 15 days and 2 years). Its effect was significant on basal activities and on mood. When combined with the various psychotropic drugs previously used, Survector enabled these rather special patients to return to a normal lifestyle. (Journal abstract modified)

002067 Cohn, Jay B.; Gottschalk, Louis A. Dept. of Psychiatry, Psychopharmacology Research Laboratory, University of California, Irvine, CA 92664 **Double-blind comparison of ketazolam and placebo using once-a-day dosing.** Journal of Clinical Pharmacology. 20(11-12):676-680, 1980.

Ketazolam was compared to placebo in a 28-day double-blind study of 108 outpatients with moderate to severe anxiety. Rating scales and dropout rates showed that ketazolam (once daily, 15 to 75mg) was significantly more effective than placebo at all evaluation periods. Moreover, the incidence of reported side-effects steadily decreased in the ketazolam group, while steadily increasing in the placebo group. Results indicate that a single daily dose of ketazolam at bedtime provides safe and effective relief of anxiety. 11 references.

002068 Collard, J. Unite de psychopharmacologie (S44), Hopital Universitaire de Baviere, Boulevard de la Constitution, B-4020 Liege, Belgium **Pimozide in the treatment of some in** Acta Psychiatrica Belgica. 79(6):686-703, 1979.

Forty patients with some social maladjustments or disturbed interpersonal relationships underwent long-term treatment with pimozide. The Ss were initially given 2mg daily of pimozide; the dosage subsequently was adapted individually. The Ss were assessed at the start of the trial, at the end of months 1, 2, 3, and at the conclusion of the study for the initial symptoms for which they sought treatment and for a series of character neuroses items. The results of a statistical evaluation show significant improvement in tension, sleep disorders, intellectual disturbances, cardiovascular symptoms, and gastrointestinal complaints. Overall, 25 patients responded well or very well, 8 responded satisfactorily, and 7 responded poorly. It was discovered that pimozide treatment is not indicated for neurasthenia and related states with predominant asthenia. It is concluded that pimozide treatment requires extra patience on the therapist's part since results may not become apparent for 1 to 2 months. 6 references. (Author abstract modified)

002069 Gray, Jeffrey A. Dept. of Experimental Psychology, Oxford University, Oxford, England **Possible limbic sites of action of anti-anxiety drugs.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 252-256).

A theory of anxiety and of the psychological action of antianxiety drugs is presented based on the involvement of the limbic system. The theory uses a general theory of learning which postulates that emotional behavior is the outcome of an interaction between two basic learning processes: classical and instrumental conditioning. Experiments on the behavioral effects of drugs such as the benzodiazepines, barbiturates, and alcohol in animals are also considered. It is proposed that the effective stimuli for anxiety are those associated with punishment, frustration, nonreward, and novel conditions. The behavioral consequences of anxiety are seen as inhibition of behavior, increased arousal, and increased attention to novel features of the environment. Physiological experiments suggest that the neural substrate of anxiety includes the septohippocampal system and its monoaminergic input from the brainstem. 11 references. (Author abstract modified)

002070 Greiss, Kamal C.; Fogari, Robert. 198 Stevens Ave., Jersey City, NJ 07305 **Double-blind clinical assessment of alprazolam, a new benzodiazepine derivative, in the treatment of moderate to severe anxiety.** Journal of Clinical Pharmacology. 20(11-12):693-699, 1980.

In a 4-week, double-blind clinical trial in outpatients with anxiety neurosis, alprazolam was significantly more effective than placebo in improving scores on five anxiety rating scales. The discontinuation rate was also lower in the drug group than in the placebo group. Patients receiving alprazolam reported fewer side-effects than did placebo patients; drowsiness was the most frequently reported side-effect in both groups. 12 references.

002071 Griffith, D. N. W. Section of Clinical Pharmacology, Academic Dept. of Medicine, Royal Free Hospital, Pond St., London N. W. 3 2QG, England **The effect of beta -adrenergic receptor blocking drugs on cerebral blood flow in hypertensive patients.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 833-836).

The effect of beta-adrenergic receptor blocking drugs on cerebral blood flow (CBF) in hypertensive patients was investigated to further evaluate suggestions that these blockers may reduce CBF (which may cause some of the well-known side-effects, such as fatigue, lethargy, and depression). The results of the administration of labetalol, metoprolol, oxprenolol, or sotalol to 33 patients meeting criteria for hypertension (mean diastolic pressure greater than 100mm Hg), showed no significant change in CBF when compared with pretreatment levels. It therefore appears that beta blockers comply with the outstanding impression that the CBF is highly resistant to change stemming from drug action. 12 references.

002072 Kalis, D.; Ten Oever, G. H. M.; Erdmann, J. F. Muiderwaard 500, Alkmaar, The Netherlands **Fluspirilene (Imap) in the treatment of psychosomatic complaints in hypochondriacal patients.** Acta Psychiatrica Belgica. 80(3):321-328, 1980.

Two hundred sixty patients with psychosomatic complaints of a hypochondriacal nature were treated with a weekly i.m. dose of 1.2mg to 1.5mg fluspirilene (0.6ml to 0.75ml Imap) for a period of 10 weeks. Each week the following symptoms were rated: typical functional organic complaints, emotional lability, anxiety, restlessness, depression, feeling of inadequacy, insomnia, and fatigue. The physicians thought that good results occurred in 58% of the patients, and moderate results were evidenced in 28%. The patients themselves rated results good in 60% of cases, and moderate in 26%. The treatment was judged acceptable by 88% of the physicians and 90% of the patients. Side-effects were minimal and half of them were transient; two of the most prominent were dry mouth and sweating. 6 references. (Journal abstract modified)

002073 Kathol, Roger G.; Noyes, Russell, Jr.; Slymen, Donald J.; Crowe, Raymond R.; Clancy, John; Kerber, Richard E. Noyes: Dept. of Psychiatry, University of Iowa, College of Medicine, 500 Newton Rd., Iowa City, IA 52242 **Propranolol in chronic anxiety disorders: a controlled study.** Archives of General Psychiatry. 37(12):1361-1365, 1980.

The efficacy of propranolol hydrochloride was tested in a series of patients with chronic anxiety disorders and the response of psychological as well as somatic symptoms to the drug was examined. In a double-blind crossover study the beta-adrenergic blocking drug reduced symptoms in 17 of 26 patients with chronic anxiety disorders. Both somatic and psychic symptoms improve as judged by patient and observer ratings. The most frequent side-effects (dizziness, fatigue, and insomnia) were difficult to distinguish from anxiety symptoms and were, for the most part, mild. The therapeutic and side-effects observed suggest CNS activity of the drug. 20 references. (Author abstract modified)

002074 Kleber, Ronald J. 84 Lacy Street, Marietta, GA 30060 **Ketazolam compared to diazepam and placebo in the treatment of anxiety.** Journal of International Medical Research. 8(6):439-445, 1980.

Drug treatment of anxiety by ketazolam given once daily at bedtime, diazepam given in multiple daily doses, and placebo given either once or multiple times daily was compared. The 28-day double-blind study involved 56 patients. Compared to placebo, ketazolam was more effective in alleviating the symptoms of anxiety than was diazepam. Ketazolam patients reported fewer, milder side-effects than diazepam patients. In particular, drowsiness was reported less than 8% as often during ketazolam treatment as during diazepam treatment. 9 references. (Author abstract modified)

002075 Libusova, E.; Libus, J. Psychiatric Clinic, 580 01 Havlickuv Brod, Czechoslovakia **Tofisopam in pseudoneurasthenia with headaches.** Activitas Nervosa Superior. 22(3):183-184, 1980.

A double-blind, cross-over study of tofisopam in the treatment of 30 neurotic female patients suffering from pseudoneurasthenia with headache is described. Results of 14-day periods of treatment with placebo and tofisopam were evaluated by two therapists using the N-5 questionnaire and the Hamilton rating scale of anxiety, and by individual quantification of difficulties, especially headache. Tofisopam had a good effect in 76% and placebo in 33%. The merits of tofisopam were a minimum of fatigue and a marked decrease of intrapsychic tension, slight euphoria, and the absence of side-effects.

002076 Linnoila, M.; Viukari, M.; Lamminsivu, U.; Auvinen, J. Box 3870, Duke University Medical Center, Durham, NC 27710 **Efficacy and side effects of lorazepam, oxazepam, and temazepam as sleeping aids in psychogeriatric inpatients.** International Pharmacopsychiatry. 15(2):129-135, 1980.

The efficacy and side-effects of 2mg of lorazepam, 30mg of oxazepam, and 20mg of temazepam as sleeping aids were investigated in 20 psychogeriatric inpatients. The drugs were administered in a random order, double-blind, for 7 nights each. All of these short half-life benzodiazepines proved efficacious in maintaining sleep. None of them reduced sleep latency. Oxazepam and, to a lesser degree, temazepam induced withdrawal insomnia during the first night after treatments. The withdrawal of lorazepam induced a delayed but prolonged insomnia in three patients. Both lorazepam and oxazepam had muscle relaxant side-effects after awakening. 23 references. (Author abstract)

002077 Linnoila, M.; Viukari, M.; Numminen, A.; Auvinen, J. Box 3870, Duke University Medical Center, Durham, NC 27710 **Efficacy and side effects of chloral hydrate and tryptophan as sleeping aids in psychogeriatric patients.** International Pharmacopsychiatry. 15(2):124-128, 1980.

The effects of placebo, L-tryptophan (3g) and chloral hydrate (500mg) on sleep were studied in 19 nonpsychotic, mildly-demented geriatric inpatients. Only chloral hydrate was more effective in inducing and maintaining sleep than placebo. Neither chloral hydrate nor L-tryptophan had any significant side-effects, but withdrawal of chloral hydrate was associated with insomnia. 17 references. (Author abstract)

002078 Lopez-Zanon, A.; Aguillaume-Torres, R. Servicio de Psiquiatria I, Ciudad Sanitaria Provincial Francisco Franco, Madrid, Spain **Nomifensine in the treatment of obsessive compulsive neurosis. Therapeutic efficacy and tolerability in comparison to imipramine.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1054-1058).

Two groups of 14 patients each, suffering from obsessive compulsive neurosis, were treated with either imipramine or nomifensine in a double-blind randomized group design. A general improvement in the Clinical Global Impressions was noted under both drugs following 6 weeks of treatment. There was also a significant reduction of obsessive symptoms according to results obtained with a special scale. Physical examination and laboratory tests showed no abnormalities. Side-effects, particularly of the anticholinergic type, were more frequent under imipramine. Both drugs were effective, but it is concluded that nomifensine has superior tolerability.

002079 McEvilly, James P.; Etemad, Bijan. Feasterville Evaluation Center, Feasterville, PA 19047 **A double-blind parallel-group comparison of single bedtime doses of halazepam and placebo.** Journal of International Medical Research. 8(5):368-373, 1980.

The safety and efficacy of once-daily bedtime doses of halazepam were compared to those of placebo. A single bedtime dose of 120mg of halazepam was effective in the treatment of patients with mild to moderate anxiety. This dose was superior to both placebo and a 60mg dose in the 2-week study, as shown by both physician and patient rating scales. It is concluded that the safety of single bedtime doses of halazepam is confirmed. All the reported side-effects were known adverse experiences to benzodiazepines in general. 6 references. (Author abstract modified)

002080 McEvoy, Joseph P.; Sheridan, William F.; Stewart, W. R. C., Jr.; Ban, Thomas A.; Wilson, William H.; Guy, William; Schaffer, J. David. Tennessee Neuropsychiatric Institute, Clinical Research Service, 1501 Murfreesboro Road, Nashville, TN 37217 **Viloxazine in the treatment of depressive neurosis: a controlled clinical study with doxepin and placebo.** British Journal of Psychiatry. 137(November):440-443, 1980.

In a 4-week double-blind clinical trial, 31 patients with depressive neurosis were treated with viloxazine, doxepin, or placebo. There were no differences among the three groups in therapeutic effects. Many depressed outpatients improved on placebo. Viloxazine hydrochloride is one of a series of compounds developed to explore the CNS activity of the aryloxypropanolamine type of beta-adrenoceptor antagonists. Initial clinical studies support the hypothesis that viloxazine has antidepressant properties. 9 references. (Author abstract modified)

002081 Mountjoy, Christopher Q.; Marshall, Elizabeth F.; Campbell, Iain C.; Garside, Roger F.; Roth, Martin. Dept. of Psychiatry, University of Cambridge Clinical School, Level 4, Addenbrooke's Hospital, Hills Road, Cambridge CB2 2QQ, England **Prediction of response to treatment with phenelzine in neurotic patients.** Progress in Neuro-Psychopharmacology. 4(3):303-308, 1980.

The records of patients completing a double-blind trial of phenelzine and diazepam, and placebo and diazepam were examined to see if any pretreatment features were associated with response to phenelzine. There was no evidence of a difference in pattern of response between the two treatment groups. Initial biochemical values; acetylator status and premorbid personality features were not associated with improvement. Some anxious and phobic symptomatology was positively correlated with improvements. Depressive symptomatology was poorly negatively correlated with improvement. It is concluded that prediction of response is not possible using these pretreatment variables. 33 references. (Author abstract modified)

002082 Neziroglu, F. North Nassau Mental Health Center, Manhasset, NY **A combined behavioral-pharmacotherapy approach to obsessive-compulsive disorders.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 591-596).

Data are presented on the combined behavioral/pharmacotherapeutic (chlorimipramine, or CLI) treatment of 150 obsessive-compulsive patients over a 4-week period. Dosages were from 25mg to 300mg per day, and flooding and response prevention techniques were used. Laboratory data showed that CLI works by blocking the reuptake of serotonin (5-HT) and that these patients have significantly lower blood 5-HT as compared to other patients. After a 60% reduction in symptoms as a result of drug treatment, additional improvement was noted in 18.7% of the Ss over 10 sessions of behavior therapy. Ongoing research indicated further reductions with flooding and response prevention. It is concluded that after complete mastery of the behavioral approach, patients may be taken off medication. 14 references. (Author abstract modified)

002083 Snyder, Scott. Dept. of Psychiatry, Baylor College of Medicine, Houston, TX 77030 **Trichotillomania treated with amitriptyline.** Journal of Nervous and Mental Disease. 168(8):505-507, 1980.

A case of trichotillomania (compulsive hair pulling) in a young adult is discussed. The patient was treated with amitriptyline in progressively increasing dosage, with marked improvement in her symptoms. Amitriptyline has a pharmacological spectrum of action analogous to chlorimipramine, a medication with reputed effectiveness in severe compulsive behaviors. 18 references. (Author abstract modified)

002084 Solyom, L.; Sookman, D.; Solyom, C.; Morton, L. Shaughnessy Hospital, Vancouver, British Columbia, Canada **Obsessive symptom response to behaviour therapy and to antidepressant drugs.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 586-590).

A group of 56 severe, chronic obsessive neurotics was treated using four behavior therapies (flooding, thought stopping, aversion relief, or desensitization plus thought stopping) over 50 sessions and were given one of three antidepressant drugs (clomipramine, phenelzine plus trimipramine, or doxepine) during a 6-week period. Groups were tested on psychiatric rating scales, psychometric forms, and self-rating forms before and after treatment. There was wide variability in response within and between groups. The overall outcome was most favorable for those Ss in the flooding, thought stopping, clomipramine, and phenelzine plus trimipramine groups. 13 references. (Author abstract modified)

002085 Tansella, Christa Zimmermann. Istituto di Clinica Psichiatrica di Verona, Policlinico, I-37134 Verona, Italy **The long-term treatment with benzodiazepines: suggestions for further research.** International Pharmacopsychiatry. 15(2):99-104, 1980.

Suggestions for further research into the long-term treatment of anxiety disorders with benzodiazepines are offered. While the effects of short-term benzodiazepine treatment have been extensively studied in several well-designed, controlled, clinical trials, further information is needed on the value and risks of anxiolytic drugs when administered over months to maintain chronic patients. Clinical trials on the effects of long-term benzodiazepine treatment present several methodological problems. These problems are discussed in relation to samples, drugs and dosage, duration, measures, and experimental design. 22 references. (Author abstract modified)

002086 Thoren, Peter; Asberg, Marie; Cronholm, Borje; Jornestedt, Lennart; Traskman, Lil. Asberg: Dept. of Psychiatry, Karolinska Hospital, S-104 01 Stockholm 60, Sweden **Clomipramine treatment of obsessive-compulsive disorder: I. A controlled clinical trial.** Archives of General Psychiatry. 37(11):1281-1285, 1980.

The effect of clomipramine hydrochloride in severe obsessive-compulsive disorder (OCD) was compared with that of nortriptyline hydrochloride and placebo in a 5-week randomized double-blind trial. Clomipramine, but not nortriptyline, was superior to placebo in interview-based ratings of severity of OCD. The effect was not clear-cut until after 5 weeks of treatment. When clomipramine was given openly to 22 patients after the

end of the controlled trial, half of the patients responded to the drug. The response could not be predicted from severity or duration of illness, sex, or age of the patient, or presence or absence of secondary depressive symptoms. The amelioration with clomipramine was not sustained when the drug was withdrawn. 29 references. (Author abstract modified)

002087 Vandenburgh, Herman; Kaufman, Seymour. Laboratory of Neurochemistry, NIMH, Bethesda, MD 20205 **Stretch-induced myotube growth correlates with Na pump activation. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 2 p.

Experiments which show that passive stretch of embryonic fowl skeletal muscle cells leads to stimulation of cell growth were repeated with enriched myotube cultures, prepared by treating the cultures with cytosine arabinoside for several days to remove the fibroblasts. The myotubes were found to respond to stretch in a similar manner to cultures containing both myotubes and fibroblasts: 1) increased accumulation of the amino acid analog, alpha-aminoisobutyric acid; 2) increased incorporation of amino acids into total cellular proteins and myosin heavy chains; 3) decreased degradation of long-lived proteins; and 4) increased total protein and myosin heavy chain accumulation (that is, hypertrophy). Activation of the Na pump (NaKATPase) may be involved in the process of stretch-induced cell growth since ouabain, a specific Na pump inhibitor, prevented several of the stretch-induced biochemical changes: the increased accumulation of alpha-aminoisobutyric acid and the increased incorporation of amino acids into total protein. Passive stretch of the myotubes was found to stimulate the uptake of 86Rb, a K tracer used to measure Na pump activity. This stretch-stimulated uptake of 86Rb was ouabain-sensitive and was due to a 60 to 70% increase in the Vmax of the enzyme with very little change in its Km. 3H-Ouabain-binding studies indicated that passive stretch of the cells did not lead to the appearance of new membrane Na pumps. Thus, passive stretch of skeletal myotubes appears to activate the Na pumps already present in the cell membranes. (Author abstract modified)

002088 Wheatley, David. General Practitioner Research Group, 325 Staines Road, Twickenham, TW2 5AX, England **Coronary heart disease: treating the anxiety component.** Progress in Neuro-Psychopharmacology. 4(4/5):537-544, 1980.

A double-blind study of the effects of clorazepate and placebo on the anxiety factor of patients who had suffered their first myocardial infarction is described. Patients made daily records of anginal attacks and other factors, and throughout the trial, the mean anginal attack rate and mean glyceryl trinitrate (GTN) requirement rates were less in those patients treated with clorazepate than in those treated with placebo. In the case of the GTN requirements, clorazepate treatment resulted in a significant reduction during the course of the 3-month study. A new rating scale has been devised to assess psychiatric symptomatology in patients suffering from organic conditions. 7 references. (Author abstract modified)

002089 Zapletalek, M. PK FN, 500 36 Hradec Kralove, Czechoslovakia /**Clinical aspects of anxiety and its therapy./** Klinika uzkosti a jeji terapie. Ceskoslovenska Psychiatrie. 76(2):78-84, 1980.

Clinical aspects of anxiety and fear are described based on personal observations and the professional literature. A list of anxiolytics or tranquilizers used in 1978 is presented. Anxiety is considered to be a symptom, not a sickness. Classic tranquilizers probably will continue to be used. In the new group of dibenzepines, lorazepam, clobazepam, and medazepam offer good prospects. Anxiety is described as a problem of civilization; thus, tranquilizers should be used as little as possible. 26 references. (Author abstract modified)

11 DRUG TRIALS IN MISCELLANEOUS DIAGNOSTIC GROUPS

002090 Agnoli, A.; Martucci, N.; Ruggeri, S.; Forchetti, C.; Conti, L. University of L'Aquila, L'Aquila, Italy **Neurological and neuropsychopharmacological study on dementia.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/ North Holland, 1979. 817 p. (p. 620-625).

Recent suggestions that disturbances in cholinergic and dopaminergic systems occur in dementia were further investigated by gathering neurological and neuropsychopharmacological data in cases of mnemonic disturbance dependent on inflammatory, traumatic, or vascular diseases and in dementia syndromes not consequent to multiinfarctual dementia. The methodology used in studies of short-term memory in normal Ss proved applicable to patients with dementia. The cholinomimetic drug, phosphatidylcoline was administered and the role of the dopaminergic system was evaluated via administration of amantadine, piribedil, and haloperidol. The results demonstrated the efficacy of cholinergic and dopaminergic agents in nonvascular dementia. 10 references. (Author abstract modified)

002091 Arena, R.; Iudice, A.; Virgili, P.; Moretti, P.; Menchetti, G. 2a Neurologic Clinic, University of Pisa, Pisa, Italy **Huntington's disease: clinical effects of a short-term treatment with pimozide.** Advances in Biochemical Psychopharmacology. 24:573-575, 1980.

An open study of the clinical effects of a short-term treatment with pimozide in five patients suffering from Huntington's disease (HD) is described. None of the patients had been treated previously with neuroleptic drugs. After treatment with pimozide, choreatic movements were reduced in both severity and frequency in all Ss. These data indicate that therapeutic response to pimozide may be present from the first days of treatment and may remain unchanged during the following 4 months. No adverse side-effects were noted. 9 references.

002092 Barkley, Russell A.; Cunningham, Charles E. Milwaukee Children's Hospital, 1700 West Wisconsin Avenue, Milwaukee, WI 53233 **The parent-child interactions of hyperactive children and their modification by stimulant drugs.** In: Knights, R., Treatment of hyperactive ... children. Baltimore, University Park Press, 1980. 419 p. (p. 219-236).

Parent-child interactions of hyperactive children and their modification by stimulant drugs have been examined in free play and task settings in a series of studies. In both settings, hyperactive children presented significant compliance and attentional problems to which mothers generally responded with a relatively ineffective coercive/directive strategy which presumably contributes to the child's behavioral problems. Ritalin (methylphenidate), via its effect on attention span, improved compliance and sustained on-task behavior. Mothers subsequently exerted less control and supervision, and in general, responded more positively to the child's play, interactions, and task-related behavior, a shift in management strategy that may have contributed to the positive drug treatment outcome. Data from observation and parental report indicate that, even at relatively low doses of Ritalin, children showed an increased preference for solitary play and an apparent decline in social interactions with parents, teachers, and peers. Data highlight the importance of social context in the diagnosis and management of hyperactivity. 40 references. (Author abstract modified)

002093 Bavazzano, Antonio; Guarducci, Roberto; Gestri, Giampaolo; Sala, Patrizio. Geriatric Dept., Ospedale Generale

Provinciale della Misericordia e Dolce, Prato, Italy **Clinical trial with amantadine and Hydergine in elderly patients.** Journal of Clinical and Experimental Gerontology. 2(4):289-299, 1980.

In a double-blind clinical trial, amantadine (200mg/daily) was compared with Hydergine (4.5mg/daily) and with a combination of amantadine (200mg/daily) plus Hydergine (4.5mg/daily) in the treatment of elderly patients suffering from psychomotor deterioration. Each treatment lasted a month. Amantadine improved the signs of depression, motor deterioration, deterioration of intellect, and loss of short-term memory. The effects of Hydergine and of the combination of the two drugs was less satisfactory. Comparison between the three treatments showed significant differences between amantadine and the amantadine plus Hydergine combination, and a nonsignificant trend in favor of amantadine over Hydergine. No difference was found between Hydergine and the combination of the two drugs. These results suggest the possibility of a negative interaction between amantadine and Hydergine. 26 references. (Author abstract)

002094 Beau, Y.; Guillard, P. no address **/An attempt to treat the side-effects of psychotropic therapy with bromocriptine./** Essai de traitement par la bromocriptine des effets secondaires endocriniens des traitements psychotropes. Annales Medico-Psychologiques. 138(2):179-186, 1980.

The use of bromocriptine, a dopaminergic agonist, to alleviate endocrinologic side-effects caused by treating psychotic conditions with psychotropic drugs was studied. Bromocriptine was administered to 30 subjects in a dose of 10 to 15mg daily divided into four to six doses per day. Results indicate very favorable improvement of sexual functions in 40% of the men, and improvement of menstrual cycle disorders in 55% of the women. Tolerance for bromocriptine proved excellent. It is concluded that, if begun early enough, bromocriptine is very useful in correcting endocrinologic disorders caused by treatment with psychotropic agents. A discussion follows the main text. 4 references. (Author abstract modified)

002095 Beck, O.; Borg, S.; Holmstedt, B.; Kvande, H.; Skroder, R. Dept. of Toxicology, Karolinska Institut, Box 60 400, S-104 01 Stockholm, Sweden **Concentration of serotonin metabolites in the cerebrospinal fluid from alcoholics before and during disulfiram therapy.** Acta Pharmacologica et Toxicologica. 47(4):305-307, 1980.

Treatment with disulfiram for 1 week increased cerebrospinal fluid levels of 5-hydroxytryptophol (5-HTOL) in 10 male hospitalized alcoholics. Levels of 5-HTOL were higher in the alcoholic patients than in nonalcoholic controls before and after disulfiram treatment. Levels of 5-hydroxyindolacetic acid were not significantly altered by disulfiram. Results suggest that disulfiram potentiates the altered serotonin metabolism of alcoholic patients. 10 references. (Author abstract modified)

002096 Blumenthal, M.; Byring, R.; Koivula, K. Clinic of Neuropsychiatry, Tilkka Central Military Hospital, Helsinki, Finland **Comparison of nitrazepam 5 mg with triazolam 0.5 mg in young psychiatric insomniac inpatients.** Acta Psychiatrica Scandinavica. 62(5):519-524, 1980.

Sixty young male patients with insomniac disorders were treated with nitrazepam 5mg or triazolam 0.5mg in a double-blind single night cross-over study. The results were favorable for triazolam in all the sleep parameters assessed. A few minor side-effects were reported by the patients but these were not taken to be related to the drugs administered. The significance of a hypnotic with a short life and its use in clinical practice is discussed. 11 references. (Author abstract modified)

002097 Bowers, M. B., Jr.; Gold, B. I.; Roth, R. H. Dept. of Psychiatry, Yale University School of Medicine, New Haven, CT 06519 **/Cerebrospinal fluid GABA in psychotic disorders./** CSF GABA in psychotic disorders. Psychopharmacology. 70(3):279-282, 1980.

Lumbar cerebrospinal fluid (CSF) GABA and homovanillic acid (HVA) levels were measured in two groups of psychotic inpatients, one group drug-free for at least 2 weeks and another group at approximately 10 days and 6 weeks during haloperidol treatment. CSF GABA levels were not significantly different in the drug-free group from a group of psychotic patients at two points during haloperidol treatment or a neurological comparison group. In the untreated group, CSF GABA was significantly negatively correlated with clinical ratings of anxiety and agitation. Early in haloperiodol treatment, CSF GABA was significantly positively correlated with CSF HVA. 21 references. (Author abstract modified)

002098 Bowers, M. B., Jr.; Heninger, G. R.; Sternberg, D.; Meltzer, H. Y. Yale University School of Medicine, New Haven, CT 06519 **Clinical processes and central dopaminergic activity in psychotic disorders.** Communications in Psychopharmacology. 4(3):177-188, 1980.

Cerebrospinal fluid (CSF) levels of homovanillic acid (HVA) and GABA, plasma levels of HVA, and serum prolactin levels were determined in psychotic patients about 3 weeks after termination of neuroleptic treatment. Results revealed no correlation between these parameters and the neuroleptic dose during treatment. Increased arousal and agitation were positively correlated with HVA and negatively correlated with GABA. Morning serum prolactin level was negatively correlated with the duration of illness and drug treatment. 10 references. (Author abstract modified)

002099 Brauman, H.; Gregoire, F. Biochemistry Dept., Brussels University, Bruxelles, Belgium **Hormonal abnormalities in anorexia nervosa (AN).** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 602-608).

The growth hormone (GH) response to insulin-induced hypoglycemia (ITT) was investigated in 17 anorexia nervosa patients to determine hormonal abnormalities in this condition. The most striking abnormality was the prepubertal type of gonadotropin (LH and FSH) response to LH-FSH releasing hormone (LHRH). The relative unresponsiveness of GH to a potent hypothalamic stimulus such as ITT favors a hypothalamic dysfunction, while the function of the corticotropic hypophyseal/hypothalamic axis seems unaffected. Thyroid stimulating hormone (TSH) response to TSH releasing hormone (TRH) was similar to that seen in depression. Prolactin response to TRH did not offer a clue to the pathogenesis of anorexia nervosa. 5 references. (Author abstract modified)

002100 Broche, J. P. Avenue de la Pairelle 72, B-500 Namur, Belgium **/Use of pimozide (ORAP) in child psychiatry./** Utilisation du pimozide (ORAP) en pedo-psychiatrie. Acta Psychiatrica Belgica. 80(3):341-346, 1980.

Pimozide was tested in 10 children with antisocial behavior in a double-blind crossover study. A diagnosis for each child had been made on the basis of the Diagnostic and Statistical Manual of Mental Disorders (DSM-II). Dosage ranged from 1 to 2.6mg of pimozide per day for a period of 2 months. A statistical analysis (Wilcoxon matched pairs, signed ranks test, and one-tail probability) was made of various behavioral characteristics during administration of placebo or pimozide. Results show that pimozide improves social integrative behavior. 7 references. (Journal abstract modified)

002101 Casey, Daniel E.; Gerlach, Jes; Magelund, Gerhard; Christensen, Torben Rosted. Dept. of Psychiatry, Veterans Administration Medical Center, Sam Jackson Park, Portland, OR 97201 **Gamma-acetylenic GABA in tardive dyskinesia.** Archives of General Psychiatry. 37(12):1376-1379, 1980.

The effects of increasing brain gamma-aminobutyric acid (GABA) with gamma-acetylenic GABA (GAG), a drug that inhibits GABA transaminase, were evaluated in 10 patients with stable tardive during active treatment and two placebo periods were evaluated by scoring randomly sequenced videotapes of tardive dyskinesia and parkinsonian symptoms recorded weekly during a standardized examination. Tardive dyskinesia was significantly reduced, and preexisting parkinsonism increased slightly. The largest decrease in tardive dyskinesia symptoms occurred in patients receiving higher neuroleptic doses, suggesting an interaction between GABA and dopamine. Prolactin values increased but growth hormone values were unchanged. Psychiatric symptoms are reported to have been unchanged during GAG treatment. 31 references. (Author abstract modified)

002102 Casey, Daniel E.; Tepper, Stewart. Dept. of Medical Research, V.A. Hospital, Portland, OR **Cholinergic aspects of tardive dyskinesia.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 647-652).

Studies are reviewed which the hypothesis that tardive dyskinesia results from dopaminergic receptor supersensitivity and a disruption in reciprocal dopaminergic/cholinergic influences in the striatum. Clinical trials investigated the cholinergic (ACh) contributions of the syndrome with ACh agonists and antagonists. Physostigmine and single anti-ACh challenges were used to acutely change ACh influences, whereas ACh precursor loading with choline, deanol, and lecithin and oral anti-ACh agents were used to chronically modify ACh influences. The results of these studies and observations of paradoxical responses are discussed, and it is concluded that the data are consistent with the hypothesis of relative central hypo-ACh function. 28 references. (Author abstract modified)

002103 Chauvot, Bernard. Centre Hospitalier Specialise, 56, avenue du General-Sarrail, F-51000 Chalons-sur-Marne, France **/Arcalion-200 prescribed as a psychiatric and antialcoholism drug on an outpatient and inpatient basis./** L'Arcalion-200 en prescription psychiatrique et anti-alcoolique ambulatoire et institutionnelle. Psychologie Medicale. 12(9):1985-1991, 1980.

The use of Arcalion-200 in the treatment of psychiatric disturbances found in alcoholics was studied. A dose of 400mg Arcalion-200 was administered to 15 men and 8 women for a period of 2 months. The Ss suffered from alcoholism with depression, neurosis, and psychosis. Results indicate improvement in 15 cases and failure in 8 cases (2 male alcoholics, 2 female depressive patients, 2 male neurotic patients, and 1 young depressive schizophrenic patient). One case of intolerance was noted. It is concluded that Arcalion-200 is a valuable treatment for asthenia and inhibition seen in alcoholics undergoing withdrawal, especially when they are taking disulfiram. 7 references. (Journal abstract modified)

002104 Cinciripini, Paul M.; Epstein, Leonard H.; Kotanchik, Nancy Lynn. Dept. of Behavioral Sciences, School of Medicine, University of Minnesota, Duluth, MN 55812 **Behavioral intervention for self-stimulatory, attending and seizure behavior in a cerebral palsied child.** Journal of Behavior Therapy and Experimental Psychiatry. 11(4):313-316, 1980.

The effects of a behavioral treatment package and anticonvulsant medication on the self-stimulation, seizure activity and attention of a 7-year-old White male with cerebral palsy were evaluated. Behavioral strategies included hand overcorrection for self-stimulation and differential reinforcement of attentional responses and behaviors incompatible with self-stimulation. Carbamazepine (tegretol) was added to the behavioral program in a later phase, continued for 2 weeks, and then withdrawn while behavioral strategies remained in effect. The results showed rapid and significant improvements in all target symptoms during all phases of behavioral treatment, while introduction and withdrawal of medication did not result in any significant changes. Effects were maintained at 8-month followup. 6 references. (Author abstract modified)

002105 Claret-Tournier, T. Service de Geriatrie, Hopital de Chambery, F-73000 Chambery, France **/Cerebral senescence and its psychic manifestations. The effectiveness of Debrumyl./** La senescence cerebrale et ses troubles psychiques. Interet de Debrumyl. Revue Geriatrique. 4(3):141-143, 1979.

Cerebral senescence and its psychological manifestations were explored with the use of the drug Debrumyl. Elderly hospitalized patients often experience trouble in social readjustment. An attempt was made to improve their condition with the psychostimulant, Debrumyl. The effectiveness of the drug was studied in a group of 43 patients (34 women and 9 men between ages 64 to 95) affected by various psychic difficulties connected with senescence. Each Ss received a dosage of 3 vials a day for at least 3 to 4 weeks. The best results were obtained for patients with sleeping problems. Problems with attention and behavior were often ameliorated. (Journal abstract modified)

002106 Cohen, Donald J.; Detlor, Jill; Young, J. Gerald; Shaywitz, Bennett A. Child Study Center, Yale University, 333 Cedar St., New Haven, CT 06510 **Clonidine ameliorates Gilles de la Tourette syndrome.** Archives of General Psychiatry. 37(12):1350-1357, 1980.

Two years of clinical study of clonidine in the treatment of 25 patients with severe Gilles de la Tourette syndrome (TS) are reviewed. Clonidine hydrochloride, a centrally-active alpha-adrenergic agonist, was observed to ameliorate the disorder in the majority of 25 patients who could not tolerate or did not benefit from treatment with haloperidol. Clonidine had a gradual onset of action. Compulsive behavior, frustration intolerance, speech difficulties, behavioral blocking, attentional problems, and tics were responsive to treatment. It is suggested that the noradrenergic system may be involved, primarily or secondarily, in the expression of the genetic predisposition to TS. 41 references. (Author abstract modified)

002107 Cohen, Michael Jay. no address **Drugs and the special child.** New York, Gardener, 1979. 258 p.

A collection of nine papers with information about drug research for teachers and other school personnel who deal with the hyperactive child is presented. The lack of systematic research done with children receiving drugs to help them control classroom behaviors which impede more optimum learning; the relative isolation between the physician and school personnel; the school's role when drugs are prescribed; various kinds of parental involvement with their special child; and research on the short-term and long-term effects of children's behavior are examined. A chapter on children's rights gives child oriented perspectives for parents and others wishing to have drugs prescribed for a child.

002108 Darcourt, G.; Lavagna, J.; Capdeville, C.; Myquel-Sider, M.; Gagniere, B.; Becle, J. Service de Psychiatrie, Hopital Pasteur, F-06031 Nice Cedex, France **/The association of retard neuroleptics to other neuroleptics in the rehabilitation of psychotic patients./** L'association des neuroleptiques-retard a

d'autres neuroleptiques dans les post-cures des psychotiques. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1076-1080).

The role of slow neuroleptics in the rehabilitation of psychotics was studied. The observed population consisted of 51 women and 31 men between 19 and 74 years of age. Diagnoses included: 45 chronic schizophrenics, 25 chronic delusions, and 12 psychotics. Results indicate insufficient improvement in the majority of cases treated with the average dose. Tolerance was good in 66 cases. In those cases where other medications were associated with the neuroleptics, improvement was much higher. It is suggested that, due to the beneficial effects of neuroleptics, the dosage should be increased in most cases.

002109 de la Fuente-Ramirez, Juan Ramon. Instituto Nacional de Nutricion, Mexico, D.F., Mexico **/Beta-blockers in psychiatry./** Bloqueadores beta en psiquiatria. Salud Mental. 3(4):29-31, 1980.

The use of propanolol in clinical studies of anxiety, schizophrenia, and other illnesses related to the existence of beta-receptors in the central and peripheral nervous systems is discussed. Propanolol was not more effective than the benzodiazepines in the treatment of anxiety, according to the results of 13 controlled studies. However, when used with patients who had become dependent on other tranquilizers, it was quite effective. Propanolol has been even less helpful with schizophrenics. It can be used beneficially in controlling hand tremors and alcohol use. The psychiatrist is advised to become familiar with the properties of these types of drugs. 18 references.

002110 De Villard, R. Service de Neuro-psychiatrie, Hopital neurologique, F-69000 Lyon, France **/Survector and sleep disorders: sleep-walking, nightmares, and night terrors./** Servector et troubles du sommeil: somnambulisme, cauchemars, et terreurs nocturnes. Psychologie Medicale. 11(A):93-96, 1979.

Twenty-nine children (aged 4 to 14 years) suffering from sleep walking and other sleep disorders were given a minimum dose of 50mg and a maximum dose of 175mg, of amineptine on retiring. The drug was administered for 4 weeks in steadily decreasing doses. Twenty-eight of the 29 patients recovered completely with amineptine. The porportion of paradoxical sleep increased, Stage 4 was reduced and Stage 1 occurred more easily and rapidly. No particular side-effects were observed. It is suggested that amineptine acts by enhancing REM sleep. It was also found that hypnagogic hallucinations and paroxysmal hypersomnia disappeared completely in the children treated with amineptine under the same conditions. (Journal abstract modified)

002111 Deze, J.; Voller, G. W. Neurologisches Krankenhaus, Behandlungszentrum fur Parkinsonkranke, Klinikstr. 16, D-3500 Kassel-Hausen, West Germany **Treatment of Parkinsonian syndrome with dexetimide.** Acta Psychiatrica Belgica. 79(6):704-711, 1979.

The effect of dexetimide in combination with L-Dopa on 60 Parkinson patients with varying etiology was studied. From .5 to 1.0mg daily of dexetimide was given in slowly increasing dosages (averaging 2,000mg/day) of L-Dopa. Results show a favorable action on akinesia, rigor, and, to some extent, tremor. It is concluded that dexetimide is a rather potent long-acting antiparkinsonian agent which has the advantage of intrinsic long-term activity and of being able to be administered in a single dose. 14 references. (Author abstract modified)

002112 Diez-Ewald, Maria; Bonilla, Ernesto; Gonzalez, Jose Vicente. Instituto de Investigaciones Clinicas, Apartado 1151, Maracaibo 4001-A, Venezuela **Platelet aggregation, 5-hydroxytryptamine uptake and release in Huntington's chorea.** Progress in Neuro-Psychopharmacology. 4(3):277-283, 1980.

Platelet function of patients with Huntington's chorea (HC) and normal volunteers was investigated as a function of modifications in the uptake and release of serotonin (5-HT). Platelet aggregation was significantly decreased in patients when epinephrine, adenosine diphosphate (ADP) and collagen were used as inducers. Platelet 5-HT uptake was similar in both HC patients and controls Ss. The release of serotonin was quite low in patients when ADP was the stimulant of aggregation. 20 references. (Author abstract modified)

002113 Dodson, W. Edwin. St. Louis Children's Hospital, 500 S. Kingshighway, P.O. Box 14871, St. Louis, MO 63178 **Phenytoin kinetics in children.** Clinical Pharmacology and Therapeutics. 27(5):704-707, 1980.

Infants and children given phenytoin by mouth every 12-hours showed relatively little fluctuation in serum levels measured every 4 hours after each dose. The relative fluctuation in level was reduced as the average level rose, which is consistent with nonlinear elimination kinetics. Levels 8 hours after the dose had the least variability and were 104% of the average level over the 12 hour period. 10 references. (Author abstract modified)

002114 Dole, Vincent P. no address **Addictive behavior.** Scientific American. 243(6):138-140, 142, 144, 146, 148, 150, 154, 1980.

Various theories on addiction to drugs, alcohol, or tobacco, and a methadone treatment approach for heroin addicts are considered. Based on the view that behavioral symptoms of addiction might depend on the particular narcotic being taken, a systematic comparison of different narcotics was undertaken with long-term heroin addicts at Rockefeller University Hospital. The work branched into two parts: 1) the development of rehabilitation services for medically stabilized patients and 2) continued research into the basic pharmacology.

002115 Drtilkova, I.; Nahunek, K.; Misurec, J.; Kalab, Z.; Vyborova, L.; Podhradska, O.; Mrskos, A. Psychiatric Clinic UJEP, Jihlavska 102, 657 15 Brno-Bohunice 2, Czechoslovakia **EEG changes in children with treated phenylketonuria after phenylalanine load.** Activitas Nervosa Superior. 22(3):185-186, 1980.

Changes in psychopathology and EEG in children with treated phenylketonuria were evaluated after phenylalanine load. Results from the 15 children studied indicate that phenylalanine load applied for several days resulted in multiple and rapid changes in EEG. These included reduced alpha frequency and slight reduction in alpha amplitude. Nonspecific manifestations of irritation and paroxysmal abnormalities were more pronounced, including a rise in the number of positive hyperventilation responses and an accentuation of focal abnormalities. In several cases, there was a progressive decline in vigilance level (in the EEG) after the load.

002116 Duche, D. J. Clinique de Psychiatrie Infantile, Hopital de la Salpetriere, F-75013 Paris, France **/Double-blind controlled study on the psycholeptic effects of amineptine in mentally handicapped children without personality problems./** Etude controlee a double insu de l'activite psychoanaleptique de l'amineptine chez les enfants debiles non caracteriels. Psychologie Medicale. 11(A):87-91, 1979.

A double-blind cross-over study was conducted on 30 (7 to 13 years old) mentally handicapped girls without personality disorders. Ss were given 50mg amineptine or a placebo for 6 weeks. After a rest period of 4 weeks without treatment, the children were again treated for 6 weeks with a drug other than the one

administered in the first period. Amineptine was found to produce an increase in general activity with facilitation of language ability and improved performance in school. Social relationships, adaptation in groups and mood (the children were more cheerful, more active and relaxed) improved. Amineptine was fully tolerated in all cases. (Journal abstract modified)

002117 Duvoisin, Roger C.; Mendoza, Marina M.; Yahr, Melvin D. Dept. of Neurology, Mount Sinai School of Medicine, CUNY, New York, NY **A comparative study of bromocriptine and levodopa in Parkinson's disease.** Advances in Biochemical Psychopharmacology. 23:271-275, 1980.

The effects of bromocriptine and levodopa were compared in patients with Parkinson's disease. Bromocriptine showed significant antiparkinson efficacy but was less effective than levodopa; a mean improvement of 31% was obtained with bromocriptine, compared to 59% for levodopa. Certain patients with gait impairment showed slightly greater improvement on bromocriptine than on levodopa. 9 references.

002118 Dykman, Roscoe A.; Ackerman, Peggy T.; McCray, David S. University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, AR 72205 **Effects of methylphenidate on selective and sustained attention in hyperactive, reading-disabled, and presumably attention-disordered boys.** Journal of Nervous and Mental Disease. 168(12):745-752, 1980.

Performance on a visual search task was contrasted for hyperactive boys and nonhyperactive reading disabled and presumably attention disordered boys participating in a double-blind, crossover study (methylphenidate vs. placebo). Mean dosage levels, individually titrated, were highest for the reading disabled group, lowest for those with suspected attention disorders. All three groups were seen by teachers and parents as significantly improved while on medication, and all groups dramatically reduced extraneous responses and attention lapses on the laboratory task. On a composite measure of performance and behavior, the nonhyperactive subjects improved significantly more than the hyperactive subjects. Although given rather high average dosage levels, the subjects did not deteriorate in search behavior, which entails short-term memory. It is argued that the cerebral stimulants may be as beneficial for nonhyperactive reading disabled and attention disordered children as for hyperactive patients, for the former have just as great difficulty sustaining attention as the latter. 22 references. (Author abstract)

002119 Elie, Robert; Langlois, Yves; Cooper, Sam F.; Gravel, Gaston; Albert, Jean-Marie. Dept. of Research, Hopital Louis-H. Lafontaine, 7401, rue Hochelaga, Montreal, Quebec H1N 3M5, Canada **Comparison of SCH-12679 and thioridazine in aggressive mental retardates.** Canadian Journal of Psychiatry. 25(6):484-491, 1980.

The effect of SCH-12679, a benzodiazepine derivative, was compared to thioridazine and to placebo on aggressive behavior of 33 male and 18 female aggressive mentally retarded patients. After a 3-week chlorpromazine standardization period, no significant differences between the three treatment groups were observed in their abnormal behavior. During the comparative phase, patients treated with SCH-12679 became less hyperactive and less agitated, while those treated with thioridazine became more violent, more choleric, and more provocative. The clinical investigator and the nursing staff found significant differences between the active drugs. As compared to placebo, SCH-12679 improved the behavior of the patients, while thioridazine aggravated their condition. No important adverse reaction was found, and the drugs did not interact with sex of the patient or the presence of epilepsy. Results suggest that in mental retardation, physical restraint of hyperactivity might induce aggressivity and that one should be cautious in using neuroleptics in nonpsychotic patients. 9 references. (Author abstract)

002120 Ferguson, H. Bruce; Trites, Ronald L. Psychology Dept., Carleton University, Ottawa, Ontario K1S 5B6, Canada **Predicting the response of hyperactive children to Ritalin: an empirical study.** In: Knights, R., Treatment of hyperactive ... children. Baltimore, University Park Press, 1980. 419 p. (p. 249-257).

Response to methylphenidate (Ritalin) was assessed in 70 hyperactive children in a double-blind crossover design employing a broad range of predictor variables including brain damage and attention. Generally, the simpler, less quantitative, and more subjective the variable, the higher the rate of response. Children diagnosed by neuropsychological assessment as having brain dysfunction had a higher rate of response to methylphenidate than those having no evidence of brain dysfunction. Certain variables did appear to differentiate consistently between responders and nonresponders. Responders tended to be less attentive, more impulsive, younger, and had lower IQ scores and more minor physical anomalies than nonresponders to methylphenidate. 9 references. (Author abstract modified)

002121 Frattola, L.; Albizzati, M. G.; Bassi, S.; Spano, P. F.; Trabucchi, M. Dept. of Neurology, University of Milan, Milan, Italy **Treatment of dyskinetic and dystonic disorders with CF-25-397: clinical and pharmacological aspects.** Advances in Biochemical Psychopharmacology. 23:381-386, 1980.

The effects of the ergot derviative CF-25-397 were evaluated in patients with Parkinson's disease, Huntington's chorea, or dystonias of various origins. CF-25-397 was less useful than other ergot alkaloids, such as bromocriptine, in treating symptoms of Huntington's chorea and Parkinson's disease. However, patients with Wilson disease, torsion dystonia, congenital cerebral palsy with athetosis, or dystonias induced by chronic treatment with chlorpromazine showed significant decreases in dystonia when treated with CF-25-397. 18 references.

002122 Fromm, Gerhard H.; Terrence, Christopher, F.; Chattha, Amrik S.; Glass, Jay D. Dept. of Neurology, University of Pittsburgh School of Medicine, Pittsburgh, PA 15261 **Baclofen in trigeminal neuralgia: its effect on the spinal trigeminal nucleus: a pilot study.** Archives of Neurology. 37(12):768-771, 1980.

An open clinical trial of baclofen in trigeminal neuralgia is described, and the effect of baclofen on the spinal trigeminal nucleus is discussed. Baclofen was given to 14 patients with refractory trigeminal neuralgia. Ten patients were relieved of the paroxysms of tic douloureux while taking 60 to 80mg/day of baclofen. A reduction in the dosage of baclofen in six of these patients resulted in a recurrence of painful paroxysms in five patients. Seven patients have been pain free or almost pain free on a regimen of baclofen for four to 12 months. Results suggest that baclofen may be a useful drug in the treatment of trigeminal neuralgia and that this experimental model may successfully predict the efficacy of a drug in the treatment of this condition. 22 references. (Author abstract modified)

002123 Gallet, Gerard; Louppe, Albert; Regnault, Huguette. Hopital Psychiatrique, F-22140 Begard, France **/Clinical testing of minaprine on elderly subjects with the asthenic-depressive syndromes./** Essai clinique de la minaprine dans les etats asthenodepressifs du sujet age. Psychologie Medicale. 12(B):65-69, 1980.

The effects of minaprine were tested on 17 clinical patients and outpatients suffering from asthenic depressive syndromes. The subjects were 7 males and 10 females 58 to 70 years old, who did not require antidepressants. It was found that the toler-

ance of minaprine was excellent. No side-effects were noted in 15 out of the 17 cases. The development of the therapy was very favorable in eight cases, partial in four cases, and unchanged in five cases. Minaprine seemed less effective in cases of anxiety and disorders of attention. It is concluded that more tests are needed on individual categories of patients. Minaprine seems to be more effective in cases of depression related to involutional processes. A brief discussion with A. Louppe follows the text of the article.

002124 Gerlach, J. Sct. Hans Hospital, Dept. H., Roskilde, Denmark **Pathophysiological aspects of reversible and irreversible tardive dyskinesia.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 653-657).

Research on the pathophysiological aspects of reversible and irreversible tardive dyskinesia and new aspects of treatment are reviewed. The reversible condition appears to develop from a primary reduced dopaminergic neurotransmission and a secondary relative dopaminergic overactivity. The irreversible condition also depends on a reduced buffer capacity and possible degeneration of dopamine, acetylcholine, and GABA neurons. L-dopa reduces dopamine hypersensitivity and has, after withdrawal, a favorable effect on tardive dyskinesia in younger patients not undergoing neuroleptic drug treatment. Sulpiride and oxiperomide, which may be selective dopamine receptor blockers, have a marked antihyperkinetic effect without inducing parkinsonism. Such treatment, however, seems to aggravate the syndrome in the long run. 19 references. (Author abstract modified)

002125 Gershon, Samuel; Crook, Thomas; Ferris, Steven; Reisberg, Barry. Dept. of Psychiatry, New York University Medical Center, New York, NY **Psychostimulants and neuropeptides in geropsychiatry.** Psychopharmacology Bulletin. 16(4);31-34, 1980.

The effects of psychostimulants and neuropeptides on senility are reviewed. The CNS stimulant methylphenidate was studied in a number of experiments for possible improvement of cognitive test performance in the elderly. However, no evidence was found for any therapeutic effects of methylphenidate except perhaps a slight lessening of fatigue. Four CNS stimulants tested on aged and young rhesus monkeys also failed to improve (and sometimes impaired) short-term memory. Neuropeptides, on the other hand, have recently shown possibilities for treatment of age-related cognitive decline. Adrenocorticotrophic hormones have affected learning and retrieval processes in animals, and have produced improved affect and EEG changes in geriatric Ss. Vasopressin and enkephalins have also been shown to have positive effects on memory. 25 references.

002126 Golinko, Barry E.; Rennick, Phillip M.; Glaros, Alan G. Comprehensive Child Care Program, Dept. of Pediatrics, Brookdale Hospital Medical Center, 9620 Church Ave., Brooklyn, NY 11212 **Tolerance to dextroamphetamine sulfate in hyperactive children: assessment using an empirical neuropsychological paradigm -- a pilot study.** Progress in Neuro-Psychopharmacology. 4(6):601-606, 1980.

A battery of neuropsychological tests was administered to six hyperactive children during 6 weeks of treatment with dextroamphetamine. Nine subtests of a Repeatable Cognitive/Perceptual/Motor (cmp) Neuropsychological test Battery (RCPM), which has been shown to be sensitive to hyperactive target symptoms of motor incoordination and inattention and to changes in cmp abilities under the influence of psychoactive drugs, were administered to the children. Test performance under an initial low dose was compared with that under a high dose at the end of the treatment period. Results indicated that no children developed tolerance to dextroamphetamine. 15 references. (Author abstract modified)

002127 Gron, Ulla; Friis, Mogens Laue; Pakkenberg, Henning. Dept. of Neurology, Rigshospitalet, DK-2100, Copenhagen O, Denmark **Bromocriptine and Parkinson's disease: a 16-hour clinical evaluation.** Acta Neurologica Scandinavica. 61(2):131-136, 1980.

The disability score (Webster rating scale) in 12 parkinsonian patients on bromocriptine treatment was evaluated hourly for 16 hr. Bromocriptine was taken at fixed hours (6, 14, and 22 hours) in equal doses. No systematic changes during the day related to bromocriptine ingestion were observed. Only one patient experienced pronounced hyperkinesia. On/off phenomenas were not observed during the treatment with bromocriptine. 19 references. (Author abstract modified)

002128 Hensley, Michael J.; Saunders, Nicholas A.; Strohl, Kingman P. Faculty of Medicine, University of Newcastle, New South Wales 2308, Australia **Medroxyprogesterone treatment of obstructive sleep apnea.** Sleep. 3(3/4):441-446, 1980.

The use of medroxyprogesterone acetate (MPA) in the management of patients with obstructive sleep apnea was examined. Respiration was studied during sleep in nine patients before and during MPA therapy and in four patients after cessation of treatment. The results show that four of the patients responded clinically to the administration of MPA, with relief of excessive daytime hypersomnolence and resolution of clinical evidence for cor pulmonale. These MPA responders also showed a significant decrease in the number of obstructive apneas and total apnea time per hour of sleep. Questions raised by this study concern the duration of the sleep evaluation, absence of placebo, and blinding in the design. A brief discussion concerning the condition of the patients follows the main text of the article. 8 references.

002129 Hronek, J.; Kolomaznik, M. Psychiatric Clinic, Dukelsky trida 69, 301 00 Plzen, Czechoslovakia **Amphetaminil in the treatment of disturbed erection potency.** Activitas Nervosa Superior. 22(3):185, 1980.

The use of amphetaminil (a centrally stimulating compound with a mildly euphoric effect) in the treatment of disturbed erection potency in two groups of patients, is described. In the first group, treatment completely restored function in 10 of 19 patients; a transient or partial improvement was observed in four cases. In two patients, treatment was interrupted for side-effects (great restlessness and anxiety). In the second group, only two of 12 patients improved completely; in two others, improvement was temporary. In both groups, positive drug effect always appeared between 7 to 10 days of medication.

002130 Janzik, H. H.; Schmitz, I. Neurologische Universitatsklinik der Universitat Tubingen, D-7400 Tubingen, West Germany **Nomifensine as concomitant therapy in the treatment of parkinson patients. A double-blind placebo controlled study.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1035-1038).

The potential antiparkinson action of nomifensine, an antidepressant with pharmacological and biochemical properties similar to those of the tricyclic antidepressants, was investigated by using it as an adjunct therapy for 14 parkinson outpatients who were maintained on a constant levodopa therapy. The hypothesis that the drug has a potential antiparkinson effect was not confirmed. However, nomifensine appears to have beneficial effects on secondary psychic disorders including dysfunction in cognition and psychosomatic and paranoid complaints of these patients. Since it is well tolerated, particularly by the cardiovas-

cular system, it should be a good ancillary medication when given in addition to L-dopa. 1 reference.

002131 Kabes, J.; Dostal, T.; Volsan, O.; Taussigova, D.; Skovajsova, M. VUPs, Ustavni 137, 181 02 Praha 8-Bohnice, Czechoslovakia **/Orientational testing of chlorpromazine hydrochloride on hospitalized mental patients./** Orientacni klinicke zkouseni preparatu chlorazin u hospitalizovanych psychotickych nemocnych. Ceskoslovenska Psychiatrie. 76(5):320-325, 1980.

Chlorazine (chlorpromazine hydrochloride) was tested on 15 hospitalized mental patients in daily doses of up to 600mg for 6 weeks. It was found that 13 patients who completed the entire treatment showed significant improvements. Ten of the total suffered from schizophrenic psychosis, three were in the manic stage of a manic-depressive psychosis, and two suffered from paranoid psychosis. Their condition improved in the second and third week and continued to improve until the end of the testing. All 15 patients showed undesirable extrapyramidal and vegetative side-effects. Undesirable side-effects appeared especially when the drug was administered i.m. No symptoms of toxicity were found.

002132 Kabes, J.; Sikora, J.; Pisvejc, J.; Skondia, V. Institute of Psychiatry, 181 03 Prague, Czechoslovakia **Piracetam action in neuroleptic-induced extrapyramidal side-effects.** Activitas Nervosa Superior. 22(3):191-192, 1980.

The effects of piracetam on neuroleptic-induced extrapyramidal side-effects (NIESE) were investigated in a double-blind study of 40 psychotic patients treated with an average daily neuroleptic dose equal to 600mg chlorpromazine. In all these patients, NIESE were present in at least moderate intensity. The intensity of NIESE was evaluated at 0, 30, 60, 90, and 120 min after the first injection. Piracetam was proved to be effective against NIESE. Results suggest the involvement of changes in neuronal bioenergetic metabolism, rather than cholinergic, dopaminergic, and/or GABAergic mechanisms previously considered to underly NIESE. 2 references.

002133 Kimball, Judith Giencke. Syracuse University **The use of sensory integrative diagnostics to predict hyperactive children's responsiveness to methylphenidate (Ritalin) and pemoline (Cylert). (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2358-B, 1980. Ann Arbor, Univ. Microfilms No. 8026368, 116p., 1980.

The Southern California Postrotary Nystagmus Test (SCPNT) and other sensory integrative tests were investigated as possible predictive indicators of hyperactive children's responsiveness to Ritalin and Cylert. Preliminary tests with normal Ss showed the SCPNT to have a test/retest stability of .80 after a 2.5 year interval and to be unaffected by age, sex, or age/sex interaction. In a sample of 17 hyperactive children, prolonged postrotary nystagmus, adversive reaction to the SCPNT, low scores on Double Tactile Stimuli perception, and poor equilibrium reactions were found to be predictive of a poor response to Ritalin. Similar findings were found in tests of Cylert with 26 hyperactive Ss. These predictive tools can spare some children and their families' needless drug trials. (Journal abstract modified)

002134 Kinsbourne, Marcel; Swanson, James M. Neuropsychology Learning Clinic, Hospital for Sick Children, 555 University Avenue, Toronto, Ontario M5G 1X8, Canada **Evaluation of symptomatic treatment of hyperactive behavior by stimulant drugs.** In: Knights, R., Treatment of hyperactive ... children. Baltimore, University Park Press, 1980. 419 p. (p. 207-217).

Factors to be considered in the long-term evaluation of symptomatic treatment of child hyperactive behavior by stimulant drugs are examined. Treatment and test factors which may complicate evaluation of pharmacotherapeutic treatment of hyperactivity include: the inclusion of children for whom stimulants are not systematically effective (adverse responders); underdosage; overtreatment; fluctuating stimulant effect during the day; failure to provide appropriate educational and/or emotional support; use of invalid tests to measure acquisition of knowledge; and failure to test the child while on the symptomatic drug regime. Procedures for overcoming these problems are then delineated. The value of stimulant drug therapy in the symptomatic management of learning and behavior problems caused by impulsivity and distractibility is illustrated. It is concluded that if administered with painstaking documentation of response, with suitable precautions, and in an individualized fashion, this treatment modality offers many hyperactive children day by day assistance. 20 references. (Author abstract modified)

002135 Kress, Jean-Jacques; Cledes, Annie; Gentil, Guy; Maheo, Michel; Quere, Jean-Paul. Service de Psychiatrie Adulte, Hopital F-29243 Bohars (Finistere), France **/Minaprine in severe psychopathology: study of 20 cases./** La minaprine en pathologie psychiatrique severe: a propos de vingt cas. Psychologie Medicale. 12(9):1965-1975, 1980.

The use of minaprine chlorhydrate in the treatment of severe psychiatric disturbances was studied. Twenty patients were administered 150 to 300mg of minaprine daily for 1 to 7 months. Ss were diagnosed with the following disturbances: neurotic depressions (8), psychoses (7), mental anorexia (2), and other disorders (3). Improvement was demonstrated in 8 of the 20 cases. The drug was particularly effective in cases of inhibition and asthenia. Tolerance was excellent in the majority of the cases. 41 references. (Journal abstract modified)

002136 Kumpel, Q.; Thomasova, E.; Micakova, K. Psychogeriatric Ward, Psychiatric Hospital, 746 33 Opava, Czechoslovakia **Therapeutic results in a psychogeriatric ward after change of medication.** Activitas Nervosa Superior. 22(3):228-229, 1980.

Therapeutic results in a psychogeriatric ward for two successive years are analyzed in relation to a change in therapeutic policy which occurred during this time. In 1977 phenothiazines (chiefly thioridazine) were used in different combinations and in 1978 a policy of monotherapy with tranquilizers (primarily diazepam) with additional nonbarbiturate hypnotics as needed was instituted. Phenothiazines were given in small doses, but diazepam was given in relatively high dose because restlessness and agitation could not be managed with low doses. Gross indicators of therapeutic results (length of hospital stay, number of discharged patients, percent of somatic complications, etc.) were not significantly different under the two therapeutic regimens.

002137 Laakmann, G.; Guillery, T.; Benkert, O.; Eversmann, T. Psychiatrische Klinik, Universitat Munchen, Munchen, West Germany **Influence of nomifensine on growth hormone, prolactin, luteinising hormone and thyreotropin in healthy subjects and hyperprolactinaemic patients.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 705-710).

The effect of nomifensine (NF), a noradrenergic reuptake inhibitor and a dopamine agonist, on growth hormone (GH), prolactin (PRL), luteinizing hormone (LH), and thyreotropin (TSH) levels in healthy Ss and on GH and PRL in patients with hyperprolactinemia and/or acromegaly was investigated. An oral dose of 100mg caused a GH increase in one out of six healthy Ss, while a dose of 200mg affected five out of six Ss. A significant decrease in PRL occurred with both doses. TSH and LH were not affected by 200mg doses. In patients with PRL producing pituitary tumors, there was no effect on PRL. GH

levels remained unchanged in two acromegalic patients given 200mg NF. It is concluded that NF, administered in higher doses p.o., in healthy Ss leads to GH stimulation and a PRL decrease, whereas an inhibition of PRL secretion in hyperprolactinemic patients does not occur after a single dose. 16 references. (Author abstract modified)

002138 Lake, C. Raymond; Ziegler, Michael G.; Coleman, Michael, D.; Kopin, Irwin J. USUHS, Dept. of Psychiatry, Rm. B-3049, 4301 Jones Bridge Road, Bethesda, MD 20014 **Fenfluramine potentiation of antihypertensive effects of thiazides.** Clinical Pharmacology and Therapeutics. 28(1):22-27, 1980.

Fenfluramine was given to nine obese, hydrochlorothiazide-resistant patients with hypertension. When patients were evaluated after 2 and 5 weeks on the combined regimen, blood pressures were reduced. The elevation in plasma norepinephrine previously induced in these patients by hydrochlorothiazide was also reduced. Results suggest that fenfluramine may be useful in obese thiazide-resistant hypertensive patients when used in combination with a thiazide diuretic. 33 references. (Author abstract modified)

002139 Lambie, D. G.; Johnson, R. H.; Vijayasenan, M. E.; Whiteside, E. A. Wellington Clinical School of Medicine, Wellington, New Zealand **Sodium valproate in the treatment of alcohol withdrawal syndrome.** Australian and New Zealand Journal of Psychiatry. 14(3):213-215, 1980.

The value of sodium valproate in the management of patients during withdrawal from alcohol dependence has been assessed. Alcoholic inpatients were randomly allocated to two groups, one treated with sodium valproate, and the other acting as controls. All patients received multivitamines and fluid and electrolyte replacement and some received chlormethiazole or other tranquilizers. Treatment with sodium valproate (1200mg daily) was continued for 1 week. The occurrence of seizures and other withdrawal symptoms (tremulousness, nausea, sweating, disorientation) was noted daily. Forty-nine episodes of withdrawal have been included in the trial: 22 in the sodium valproate group and 27 in the control group. Five patients, all in the control group, had seizures. Other withdrawal symptoms disappeared more quickly in the sodium valproate group, even though fewer patients were receiving chlormethiazole. 12 references. (Author abstract)

002140 Laporte, Pierre; Bonnafoux, Daniel; Coffinet, Philippe. Hopital Saint-Remy, Claire-fontaine, F-70160 Saverney par Polaincourt (Haute-Saone), France **/Advantage of monotherapy with clobazam in the treatment and posttreatment of alcoholic withdrawal./** Interet du clobazam prescrit en monotherapie dans la cure et la post-cure de desintoxication ethylique. Psychologie Medicale. 12(6):1405-1411, 1980.

The advantages of monotherapy with clobazam in treatment and posttreatment of alcoholism were studied. A dosage of 60mg to 90mg per day was administered to 50 male patients suffering from chronic alcoholism, hospitalized during 5 weeks for a withdrawal cure. The patients were monitored for a 3-month posttreatment period. Results indicate that improvement was always good in most of the target symptoms: anxiety, insomnia, depression, and aggression. The improvement remained satisfactory during the posttreatment period in 82% of the cases. Clinical and biological tolerance were excellent in all cases. 3 references. (Journal abstract modified)

002141 Leme-Lopes, Jose. Rua Dona Mariana 53/1401, 22, 280, Rio de Janeiro, Brazil **/Delirium: treatment possibilities./** Delirio: possibilidade de tratamento. Actas Luso-Espanolas de Neurologia, Psiquiatria etc. 8(4):247-254, 1980.

Treatment possibilities for delirium are discussed. Although many schools of thought exist on treating delirium, almost all agree that a biological cause is evident and therefore biochemical treatment is possible. Two types of substances can be useful in treating delirium: those that tranquilize, and those that anesthetize. In some forms of delirium, schizophrenia treatment (insulin therapy, shock, lobotomy) can be effective. Some experts feel that the answer lies in the brain itself and its link with mentality and thought processes. 37 references.

002142 Linton, Patrick H. Dept. of Psychiatry, University of Alabama Medical Center, Birmingham, AL 35233 **Psychopharmacology of the aging.** Alabama Journal of Medical Sciences. 17(2):155-159, 1980.

Unique aspects of psychopharmacology with elderly patients are examined, and it is contended that careful attention must be paid to differences in this population group which are reflected in the increased incidence and frequency of psychological problems which accompany the aging process. Pitfalls associated with pharmacological management of the most common physical/psychological problems in the elderly are discussed. These include: 1) organic brain syndromes, 2) depression, 3) psychosis, and 4) paranoia. Age-related changes in perception, sensation, absorption, distribution and metabolism of therapeutic agents are also examined. 11 references.

002143 Lipton, Meryl Esta. University of Minnesota **The differential dose effects of methylphenidate on hyperactive children and their mothers. (Ph.D. dissertation).** Dissertation Abstracts International. 41(5):2018-A, 1980. Ann Arbor, Univ. Microfilms No. 8025476, 240p., 1980.

The effects of low and high doses of methylphenidate of social interactions between hyperactive children and their mothers were studied. Ss included 12 boys between the ages of 6 and 10 with long-standing hyperactivity. Of 16 dependent measures investigated, only two were significant in free play, and both were material. Analysis of free play behaviors against maternal history of administering drugs to their children revealed significant differences on eight out of 16 measures, only two of which were child behaviors. A number of methodologic and substantive issues remaining after analysis are discussed. (Journal abstract modified)

002144 Lipton, Morris A. Biological Sciences Research Center, University of North Carolina School of Medicine, Chapel Hill, NC 27514 **Pharmacotherapy of depression in the elderly.** Psychosomatics. 21(10):816-817, 821-824, 1980.

Problems in diagnosing and treating depression in the elderly are examined. Diagnostic pitfalls include considering sadness inherent to the aging process or mistaking depression for organic brain disease. The biochemistry of the tricyclics and its implications for choosing the best antidepressant for each patient are reviewed. Low dosages and thorough monitoring for side-effects are recommended in treating the elderly. The value of monoamine oxidase inhibitors, lithium, stimulants, and electroconvulsive therapy is also discussed. It is suggested that pharmacotherapy should always be combined with some type of psychological support. 22 references. (Author abstract modified)

002145 Loosen, P. T.; Prange, A. J., Jr.; Wilson, I. C. Dept. of Psychiatry, School of Medicine, University of North Carolina, Raleigh, NC **The TSH response to TRH injection in psychiatric patients: a review.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 780-784).

TRH was injected in depressed, alcoholic, and schizophrenic patients to study the resulting psychoendocrinological condi-

tions. TSH and cortisol were analyzed at baseline along with the TSH response to TRH and the relationship between the two hormones. TSH blunting was found in some depressed and some alcoholic patients, but not in schizophrenics. The relationship between cortisol and TSH peak response was negative in depressed Ss and normal Ss, and was random in alcoholic patients. Schizophrenics, however, showed a tendency toward a positive relationship between these variables. 28 references. (Author abstract modified)

002146 Magnus, R. V. Psychiatric Facility, Sarnia General Hospital, 220 N. Mitton St., Sarnia, Ontario NTT 6H6, Canada **A comparison of biperiden hydrochloride (Akineton) and Benzhexol (Artane) in the treatment of drug-induced parkinsonism.** Journal of International Medical Research. 8(5):343-346, 1980.

The clinical efficacy of biperiden hydrochloride (Akineton) and benzhexol (Artane) in the treatment of neuroleptic-induced parkinsonism was compared. Both drugs were highly effective and all patients responded favorably to medication. No significant difference was observed between the two treatment groups when individual symptoms were examined. 6 references. (Author abstract modified)

002147 Matejcek, M. Clinical Research, Sandoz Ltd., Basel, Switzerland **Cortical correlates of vigilance regulation and their use in evaluating the effects of treatment.** Advances in Biochemical Psychopharmacology. 23:339-348, 1980.

Age related changes in the EEG are discussed as signs of disturbed vigilance regulation. Computer-aided spectal analysis of EEGs of 619 Ss between 45 and 95 years of age revealed significant age related increases in the slow frequencies, in the delta (1.0 to 3.5cps) and theta (3.5 to 6.5cps) bands, as well as significant decreases in alpha (6.5 to 12.0cps) and beta (12.0 to 20.0cps) activity. A double-blind study of geriatric patients between 63 and 92 years of age revealed parallel EEG changes and clinical improvement in patients treated with Hydergine. 23 references.

002148 McCarron, John Ashley. California School of Professional Psychology, San Diego **The relative efficacy of cognitive therapy and chemotherapy for the treatment of depression among the retired elderly. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2334-B, 1980. Ann Arbor, Univ. Microfilms No. 8028693, 271p., 1980.

Late life depression of moderate intensity was examined using 19 subjects who were serially assigned to two treatment groups; a 10-session cognitive therapy group, and a group which received amitriptyline hydrochloride over the same time period. Both depression and level of perceived pain were significantly reduced for both groups. Followup scores on 17 subjects showed cognitive therapy significantly more effective in terms of global ratings and level of subjectively perceived pain. It is noted that the predominating characteristics for this elderly sample were lowered affect, little hope about the future, boredom, negative self-evaluation, irritability, difficulty making decisions, fatigability, sleep difficulties, and high incidence of recent losses. (Journal abstract modified)

002149 McNamara, J. O.; Carwile, S.; Hope, V.; Luther, J.; Miller, P. Epilepsy Center, V. A. Medical Centers, Durham, NC 27705 **Effects of oral choline on human complex partial seizures.** Neurology. 30(12):1334-1336, 1980.

An open study of the effects of large doses of oral choline on medically intractable human complex partial seizures (CPS), is described. Marked increases of plasma choline concentration (75% to 300%) in three Ss were associated with: 1) shorter duration of CPS; 2) less postseizure fatigue; and 3) slight increase of seizure frequency. Both the patients and their families considered the patients much improved. No differences in any of these evaluations were noted in a fourth S who had less of an increase (21%) of plasma choline content. Results suggest that oral choline therapy may be a useful adjunct in the treatment of intractable CPS. 14 references. (Author abstract modified)

002150 Mendelson, Wallace B. no address **The use and misuse of sleeping pills: a clinical guide.** New York, Plenum, 1980. 220 p. $22.50.

In a clinical guide on sleeping pills, an overview is presented of the state of the art with respect to insomnia and the use of hypnotics. Each of eight chapters devoted to hypnotic use and abuse provides historical and background data followed by detailed review of relevant research data, and ends with a summary of the major points. The approach to insomnia as a complaint rather than as a primary diagnosis is emphasized. Implications of the information presented for medical practice is discussed, and clinical guidelines for prescribing hypnotics are offered that emphasize not only a more comprehensive assessment of the complaints but also increased attention to the risk/benefit ratios of pharmacologic treatment strategies.

002151 Molcan, J.; Mayer, A.; Novotny, V.; Okruhlica, L. Psychiatric Clinica, Mickiewiczova 13, 884 21 Bratislava, Czechoslovakia **Maintenance treatment with semidepote neuroleptic fluspirilene.** Activitas Nervosa Superior. 22(3):163-164, 1980.

A study of maintenance treatment of 25 psychotic and schizophrenic outpatients with the semidepot neuroleptic, fluspirilene is reported. Treatment started after discharge and lasted for a mean of 33 weeks. The Serejskij scale and the rating scales FKP and DVP were employed for clinical evaluation (which occurred before each injection). Side-effects were generally moderate, but their intensity increased in 81% of patients during fluspirilene treatment. Most frequent side-effects were: akathisia; tachycardia; tremor; akinesia; and hypomimia. In 24 of the 25 outpatients, fluspirilene stabilized or suppressed schizophrenic symptoms. 5 references.

002152 Moldofsky, H.; Lue, F. A. Dept. of Psychiatry, Toronto Western Hospital, Toronto, Ontario M5T 2S8, Canada **The relationship of alpha and delta EEG frequencies to pain and mood in chlorpromazine and L-tryptophan.** Electroencephalography and Clinical Neurophysiology. 50(1-2):71-80, 1980.

The relationship of alpha and delta EEG frequencies to pain and mood in L-tryptophan was investigated. Aspects of sleep stage evaluation and analysis of alpha and delta EEG frequencies in sleep were shown to be related to musculoskeletal pain and mood disturbance. Chlorpromazine, but not L-tryptophan, was associated with increased slow wave sleep and amelioration of pain and mood symptoms. Mean percent time/min or mean percent power/min of alpha frequency during nonREM and REM sleep correlated with overnight increase in pain measures, hostility, and decrease in energy. On the other hand, mean percent time/min of delta in nonREM sleep was related to overnight decrease in pain and mean percent delta power/min was associated with decreased anxiety and hostility, and increased energy. 36 references. (Author abstract modified)

002153 Murie, Norbert. 2, rue de Clisson, F-35000 Rennes, France **/Experimentation with minaprine in dealing with certain sexual disorders: impotence or frigidity./** Experimentation de la minaprine dans certains troubles sexuels: impuissance ou frigidite. Psychologie Medicale. 12(B):71-79, 1980.

The effects of minaprine on sexual disorders of the type of frigidity and impotence were tested experimentally on 50 patients. The subjects were six women 42 years old on the average and

44 men 21 to 69 years old (average age 43). The results of the tests are tabulated according to: frigidity, primary sexual impotence, and secondary sexual impotence. The treatment was successful in 24 cases: ten subjects consider themselves sexually restored to normal (two of them were totally impotent), and the condition of 14 subjects improved considerably. It is concluded that even when there is an organic cause of a sexual disorder, the psychological factor is important. In pathology of sexual insufficiency, where the therapy is delicate and often ineffective, minaprine is an important agent to the extent that the sexual act is not a purely mechanical voluntary act. A sexual act is always only one of many aspects of relationships which may exist between two persons, and there are always many ways to improve the communication between them. A brief discussion with N. Murie follows the text of the article.

002154 Myslobodsky, M. S.; Mintz, M.; Douglas, R. Psychobiology Research Unit, Dept. of Psychology, Tel-Aviv University, Tel-Aviv, Israel **Electroencephalographic and behavioural effects of sodium valproate in patients with photosensitive epilepsy. A single dose trial.** Journal of Neurology. 224(2):111-123, 1980.

A single-dose trial of EEG and behavioral effects of sodium valproate in patients with photosensitive epilepsy is described. A single oral dose of sodium valproate (VPA) (10mg/kg) inhibited photoconvulsive responses, especially to 15 Hz to 30 Hz frequency flicker, in seven of 10 patients with photosensitive epilepsy. In addition, in nine of 10 patients, the amplitude of the secondary slow negative wave of the visual evoked potentials was reduced 4 to 5 hours after drug administration. However, in five patients the normalization of electrocortical reactions to a single flash and flickering light was accompanied by somnolence and fatigue, moderate slowing of EEG background, development of 3 Hz spike wave activity and augmented response to hyperventilation. In two patients, the EEG photoconvulsive discharges were exaggerated by VPA. These VPA effects suggest that photosensitivity and the underlying epileptic condition have overlapping albeit different pathophysiology. These data offer no support for the conclusion that reduced photosensitivity produced by VPA is associated with the therapeutic potency of the drug. 37 references. (Author abstract modified)

002155 Nerad, J.; Vojtechovsky, M. Psychiatric Hospital Horni Berkovice, Czechoslovakia **Dissociation of the strychnine effect on visual and verbal memory in organic psychosyndromes.** In: 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 102-105)

The effects of strychnine on visual and verbal memory in patients with organic psychosyndromes were investigated, and the dissociation of the strychnine effect on visual and verbal memory was examined. Results of treatment of 53 patients with an organic psychosyndrome and with clinically apparent memory disturbances indicate: 1) visually, there was temporary improvement of discriminative recognition and a diminishment of forgetting; and 2) no effect on verbal learning and forgetting. It is suggested that glycine may play an important role jointly with the abiotrophic cerebral processes. 3 references.

002156 Neuman, J.; Vojtechovsky, M. Psychiatric Hospital, Horni Berkovice, Czechoslovakia **Influence of strychnine on the consolidation phase of visual memory in gerontopsychiatric patients.** In: 21. Annual Czechoslovak Psychopharmacological Meeting. Jesenik Spa, Czechoslovakia, 1979. 140 p. (p. 106-111).

The influence of strychnine on the consolidation phase of visual memory was investigated in 19 gerontopsychiatric patients with organic psychosyndromes. A pilot study, using a single administration of strychnine, shows a facilitation effect on the visual memory functions of mentally deteriorated Ss, with a maximum effect at the 45th minute (early memory trace consolidation). Athough the practical use of strychnine in clinical therapy is limited by its toxicity, some preliminary data indicate its promise in the field of gerontopsychiatry. 15 references.

002157 no author. no address **Treatments for sleep-wake disorders in the elderly.** Sleep. 3(2):187-196, 1980.

Physiological and psychological techniques for treatment of sleep/wake disorders in the elderly are examined. The usefulness of sedative hypnotics for treating insomnia is considered, along with the inadvertent prescription of sleeping pills for sleep apnea. Research suggests the need for well-designed efficacy studies utilizing elderly sleep-disordered patients to judge the effectiveness of these drugs. Other treatments include use of stimulants, amino acids and their precursors, hormones, tricyclic antidepressants, monoamines oxidase inhibitors and surgery. Relaxation and other behavioral conditioning methods have questionable effectiveness, while environmental manipulations and attention to the psychological aspects of the old person's environment which may contribute to anxiety depressive neuroses and other psychiatric disorders concomitant with sleep disturbance should be emphasized.

002158 Parikh, M. D.; Abhyankar, R. R.; Bajaj, Neelam; Doongaji, D. R. Dept. of Psychiatry, K. E. M. Hospital and Seth G. S. Medical College, Bombay 400 012, India **Penfluridol in the treatment of Gilles de la Tourette's syndrome.** Neurology India. 27(4):174-177, 1979.

A case of Gilles de la Tourette's syndrome in a 15-year-old girl and its treatment with an oral long-acting neuroleptic, penfluridol, are reported. Results of a 12-week trial, with weekly penfluridol doses of 20mg, indicated 85% improvement in scores on the Abnormal Involuntary Movement Scale by week 12. In addition, relatives reported a 100% improvement in motor tics by week 8 which was maintained to week 12. Improvement in unprovoked, explosive verbal utterances was reported to be erratic, but increased to 75% by the end of week 12. In view of the natural history of the disease, its clinical manifestations, reported pathological observations in the literature, and response to medication, it is suggested that this syndrome may be psychosomatic in origin. 20 references. (Author abstract modified)

002159 Perlik, S. J.; Koller, W. C.; Weiner, W. J.; Nausieda, P.; Klawans, H. L. Dept. of Neurology, Rush-Presbyterian, St. Luke's Medical Center, Chicago, IL **Parkinsonism: is your treatment appropriate?** Geriatrics. 35(11):65-70, 74, 1980.

The effectiveness of treatment modalities for managing parkinsonism is examined. These modalities include levodopa therapy, use of other drugs, and supportive therapy. It is argued that the elderly are more sensitive to side-effects of anticholinergic drugs and that there are many problems associated with long-term treatment that require a careful monitoring. Levodopa should be given only in doses sufficient to minimize the functional disability. Physical and occupational therapy play important supportive roles, and counseling may be necessary to deal with feelings of guilt and hostility which many patients experience.

002160 Piccione, P.; Zorick, F.; Lutz, T.; Grissom, T.; Kramer, M.; Roth, T. Sleep Center, Henry Ford Hospital, 2799 W. Grand Blvd., Detroit, MI 48202 **The efficacy of triazolam and chloral hydrate in geriatric insomniacs.** Journal of International Medical Research. 8(5):361-367, 1980.

The efficacy of hypnotics in geriatric insomniacs was evaluated. The 27 patients, 60 to 94 years old, received each of the following treatments on 5 consecutive nights: chloral hydrate

250mg and 500mg, triazolam 0.25mg and 0.50mg, and placebo. The patients global evaluation of effectiveness indicated that triazolam 0.25mg and 0.50mg improved sleep more than placebo, while chloral hydrate 250mg and 500mg were not better than placebo. Triazolam 0.50mg was felt to be significantly better than either dose of chloral hydrate. Triazolam 0.50mg was found to significantly decrease the patients' estimates of their sleep latency. Patients estimated their total sleep time to be longer following the use of triazolam 0.25mg as compared to chloral hydrate 500mg, and their estimates of the number of awakenings was significantly lower on triazolam 0.50mg than it was on chloral hydrate 500mg or placebo. 22 references. (Author abstract modified)

002161 Pueschel, Siegfried M.; Reed, Robert B.; Cronk, Christine E.; Goldstein, Beth I. Child Development Center, Rhode Island Hospital, 593 Eddy St., Providence, RI 02902 **5-Hydroxytryptophan and pyridoxine: their effects in young children with Down's syndrome.** American Journal of Diseases of Children. 134(9):838-844, 1980.

The effects of 5-hydroxytryptophan and pyridoxine hydrochloride in young children with Down's syndrome were studied. The 89 Ss were given the drugs in the first 3 years of life in a double-blind study. The analysis of 5-hydroxyindole blood levels revealed that 5-hydroxytryptophan, pyridoxine, and the combination of 5-hydroxytryptophan and pyridoxine raised blood levels of 5-hydroxyindole equally well in 40% of the children. The assessment of muscle tone ratings showed no significant difference among the study groups once children with moderate and severe cogenital heart disease were excluded. Detailed studies of cognititve and adaptive function of children in the various groups found a significant difference on the Vineland Social Maturity Scale at ages 6, 12, 18, and 36 months; yet the source of significance was a negative interaction affecting children whose parents were able to comply with furnished guidance; these children showed consistently higher levels of accomplishment. 32 references. (Author abstract modified)

002162 Pujol, J. Dept. of Psychiatry, Faculty of Medicine, University of Barcelona, Barcelona, Spain **E.E.G., comp.-E.E.G., REO-EG and pharmacological correlates of geriatrics.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 902-906).

Clinical experience in evaluating the effectiveness of a variety of drugs via EEG, computerized electroencephalography, and computerized reoencephalography is reported. A model to permit evaluation of the possible clinical effects of several drugs is proposed, and the model was used with geriatric patients and healthy volunteers. Emphasis was on hypothalamic prehormones and nootropics, and specific data were obtained using melanocite inhibiting factor, TRH, pirazetam, and entirazetam. (Author abstract modified)

002163 Reisine, Terry D.; Overstreet, David; Gale, Karen; Rossor, Martin; Iversen, Leslie; Yamamura, Henry I. Uamamura: Dept. of Psychiatry, University of Arizona Health Sciences Center, College of Medicine, Tucson, AZ 85724 **Benzodiazepine receptors: the effect of GABA on their characteristics in human brain and their alteration in Huntington's disease.** Brain Research. 199(1):79-88, 1980.

The characteristics of benzodiazepine (BDZ) receptors were studied in the putamen and substantia nigra (SN) of control and Huntington's disease (HD) human brains. In the putamen, there was a significant decrease in density of BDZ receptors in the HD tissue. In addition, the application of GABA significantly potentiated GDZ receptor binding in both the HD and control putamen. In the SN, an increase in BDZ receptor density was detected in the HD tissue. GABA enhanced (3H)flunitrazepam binding in both the HD and control SN by increasing the affinity of BDZ receptors for (3H)flunitrazepam. Results suggest that there are alterations in BDZ receptors in HD human brain and that these alterations may be related to the neuronal pathology of this disease. This study also provides evidence for a coupling of GABA receptors to BDZ receptors in human brain. 36 references. (Author abstract)

002164 Rosser, R. M.; Denford, J.; Guz, A.; Kinston, W.; Macklin, D.; Minty, K.; Murphy, K.; Muir, B. Dept. of Psychiatry, Charing Cross Hospital Medical School, London, England **Psychotherapy and dyspnoea.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (1613-1617).

The psychological and physiological adaptation to chronic obstructive airways disease (dyspnea) is discussed, along with the effectiveness of psychotherapy in its management. An important psychological mechanism of adaptation is the relief of anxiety, while a physiological correlate of success is the reduction in CO2 sensitivity, although the underlying central neural pathways are not clearly understood. Treatment involves supportive or analytical psychotherapy and the administration of diazepam. 5 references. (Author abstract modified)

002165 Saito, M. Dept. of Psychiatry, Kansai Medical University, Osaka, Japan **CEEG study on patients under the psychiatric drug treatment; the correlation between EEG alteration and clinical evolution.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1306-1311).

A group of 60 schizophrenic and 40 depressed patients were followed up electroencephalographically and clinically to determine possible differences between responsive and resistant cases to psychotropic drug treatment. The drugs included haloperidol, perphenazine, or chlorpromazine for schizophrenia and amitriptyline or imipramine for depression. Therapy-responsive patients presented markedly different changes in EEG from resistant patients either in 3 hr or 1 week postdrug regardless of the given drug. A gradual increase of slow waves suggests the patient's resistance to treatment. It is concluded that an early prediction of clinical outcome can be objectively achieved via study of EEG alteration. 2 references. (Author abstract modified)

002166 Saletu, Bernd; Grunberger, Josef. Section of Pharmacopsychiatry, Psychiatrische Universitatsklinik Vienna, Wahringer Gurtel 74-76, A-1090 Vienna, Australia **Antihypoxidotic and nootropic drugs: proof of their encephalotropic and pharmacodynamic properties by quantitative EEG investigations.** Progress in Neuro-Psychopharmacology. 4(4/5):469-489, 1980.

The encephalotropic and pharmacodynamic properties of antihypoxidotics and nootropics such as dihydroergotoxine, nicergoline, Instenon forte, cinnarizine, isoxsuprine, pirazetam, and etirazetam, were investigted in normal young and geriatric Ss using quantitative EEG analysis. Power spectral density analysis of the EEG demonstrated that the ergot alkaloids hydergine and nicergoline and the hexobendine combination Instenon forte increase alpha and slow beta activity and decrease delta and theta activity. Pirazetam and the pirazetam analogue etirazetam produced a significant increase in beta activity, while alpha activity was augmented or attenuated according to dosage. The advantages of quantitative EEG investigation in psychopharmacology are discussed. 49 references. (Author abstract modified)

002167 Santos, Alberto B., Jr.; Manning, Donald E.; Waldrop, William M. Dept. of Psychiatry, Medical University of South Carolina, 171 Ashley Ave., Charleston, SC 29403 **Delirium or**

psychosis? Diagnostic use of the sodium amobarbital interview. Psychosomatics. 21(10):863-864, 1980.

The diagnostic difficulties in differentiating functional psychosis from delirium are illustrated in a case history. The use of a sodium amobarbital interview to differentiate these conditions is described. In cases of anxiety, hysteria, and catatonia, the effects of amobarbital are observable chiefly as a general relaxation with a sense of well-being, a decrease in inhibitions, and a willingness to discuss intimate topics. On the other hand, in organic conditions, mild neurologic symptoms can become markedly worse, and symptoms such as confabulation, denial of illness, and disorientation may also increase in severity. In addition, it is pointed out, patients with significant organic disease have less tolerance for barbiturate sedation. 7 references.

002168 Schachter, M.; Sheehy, M. P.; Parkes, J. D.; Marsden, C. D. Parkes: Dept. of Neurology, King's College Hospital, Denmark Hill, London, SE5 9RS England **Lisuride in the treatment of Parkinsonism.** Acta Neurologica Scandinavica. 62(6):382-385, 1980.

The antiparkinsonian effect of lisuride was investigated in 10 severely disabled patients, aged 50 to 71 years, with Parkinsonism for 4 to 52 years duration. All patients had been taking bromocriptine and eight had been taking levodopa combined with carbidopa. Total replacement of bromocriptine by lisuride was achieved in every case, but partial or total levodopa replacement was possible only in five patients. Lisuride 1mg has approximately the same antiparkinsonian activity as bromocriptine 15mg or levodopa 250 to 500mg combined with carbidopa, but the duration of action of each dose is short and gastrointestinal and neuropsychiatric side-effects are common. However, lisuride may be of considerable value in the emergency treatment of severe Parkinsonism. 5 references. (Author abstract modified)

002169 Scharbach, Hugues; Levron, Maurice. C.H.R., 9, rue de Gigant, F-44000 Nantes, France **/The use of minaprine in child psychiatry in hospitals and outpatient clinics./** Utilisation de la minaprine en psychiatrie infanto-juvenile en milieu hospitalier et en ambulatoire. Psychologie Medicale. 12(B):43-49, 1980.

The effects of minaprine on 23 boys and girls 6 to 12 years old were studied. The subjects were hospitalized or treated in outpatient clinics. They showed various psychopathological symptoms: psychomotor agitation, emotional instability, hyperactivity, learning difficulties, and intellectual inhibitions. It was found that the effect of the drug was more regular in manifestations of instability of the hyperkinetic type, in cases of minimal brain dysfunction, and in cases of inhibitions. It is concluded that minaprine modifies favorably behavioral disorders related to motor agitation, lability of attention, lack of control of impulses, and difficulties in learning which are not due to lack of efficiency. It is concluded that the results were encouraging and the tolerance of the drug was excellent. 3 references.

002170 Schocron, Gerard; Brenot, Philippe; Baruche, Francis; Poueyto, Patrice; Praigroth, Alain. C.H.S., Charles Perrens, 121, rue de la Bechade, F-33076 Bordeaux Cedex, France **/Piribedil in elderly psychiatric patients./** A propos du piribedil chez les malades ages de secteur psychiatrique. Psychologie Medigale. 12(6):1393-1401, 1980.

The use of piribedil (Trivastal 50 retard) in elderly psychiatric patients was studied. One tablet was prescribed to a group of 28 elderly patients suffering from senile dementia. Results indicate that the double vascular and neurological dopaminergic impact of the drug led to 75% positive improvement; the neurological action seemed to be responsible for the rapid clinical action. With regard to target symptoms, activity was particularly marked in relation to neurosensorial disturbance (vertigo and tinnitus), disorientation in time and space, memory defects, disturbances in behavior and mood, and psychointellectual retardation. Psychometric tests gave objective evidence of these clinical improvements in 19 cases out of 28. Tolerance was good. 61 references. (Journal abstract modified)

002171 Segal, Steven P.; Chandler, Susan; Aviram, Uri. School of Social Welfare, University of California, Berkeley, CA 94720 **Antipsychotic drugs in community-based sheltered-care homes.** Social Science & Medicine. 14A(6):589-596, 1980.

The extent of use of antipsychotic drugs in sheltered care and the effect of these drugs by dosage, age group, and psychopathology on rehospitalization and social integration were investigated. Data were collected from a large sample of former mental patients representative of all nonretarded mentally ill between 18 and 75 living in community-based sheltered-care in California. Findings suggest that antipsychotic drugs, when used with limited medical supervision, have detrimental effects on the social functioning of the least disturbed. While antipsychotics may short circuit the psychotic process and thereby reduce mental hospital readmissions, social programming is necessary to promote better social functioning. 22 references. (Author abstract modified)

002172 Sethi, P. K.; Rastogi, J. K. Medicine Neurological Centre, Command Hospital Lucknow, Lucknow, India **Cephalgic-seizures.** Neurology India. 27(1):25-28, 1979.

Fifteen cases wherein headache is the primary or major manifestation of seizure disorder are described. Although these patients present nosological difficulties, cephalgic seizure would be regarded as a definite clinical entity. Electroencephalographic investigations which revealed well-defined epileptic discharges are described. With anticonvulsants, the majority of the patients became asymptomatic. Presentation of headache as an ictal phenomenon is discussed. 14 references. (Author abstract modified)

002173 Shapiro-Ackerman, E.; Dallal-y-Castillo, E. no address **/A double-blind study with ORG GB-94 in premenopausal women./** Estudio doble ciego con ORG GB-94 en mujeres premenopausicas. Neurologia, Neurocirugia, Psiquiatria. 21(1-2):61-69, 1980.

Fifty women suffering the characteristic symptoms of premenopause, including menstrual irregularity, depression, and anxiety were studied. Two homogeneous groups were formed at random; 25 women received a placebo and 25 were treated with ORG GB-94 (Mianserine) for 60 days. The results show that the drug is an effective antidepressant as measured by the Zung and Hamilton scales. Product tolerance was satisfactory. Premenstrual tension, depression, and anxiety lessened considerably with the use of ORG-GB-94. 20 references. (Journal abstract modified)

002174 Shimizu, T.; Fukuda, T. Dept. of Neuropsychiatry, Osaka Medical College, Osaka-Takatsuki, Japan **Pathophysiologic impact of central catecholaminergic function in schizophrenia and schizophrenia-like psychoses.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 412-417).

Catecholaminergic function was investigated in schizophrenic patients by measuring cerebrospinal fluid (CSF) concentration of homovanillic acid (HVA) and vanillylmandelic acid (VMA). Emphasis was on the heterogeneity of psychophrenic psychoses and patients were divided into typical schizophrenia and atypical psychoses treated with haloperidol. Levels of HVA were raised before medication and VMA/HVA ratio was reduced in atypical psychotics. After 12 weeks of medication, significant decreases in HVA levels and significant increases in V/H ratio

occurred with clinical improvement. Differential findings from typical schizophrenics and atypical psychoses suggest that importance of subtype grouping in biological studies of the pathogenesis of the disease. Studies on interaction of several neurotransmitters are also recommended. 13 references. (Author abstract modified)

002175 Singh, S. B.; Nigam, Asha; Liu, Lucy; Mehrotra, S. N.; Srivastava, J. R. Child Guidance Clinic, Dept. of Pediatrics, G.S.V.M. Medical College, Kanpur, India **Medical psychological and combined therapy in the cases of enuresis: a comparative study.** Indian Journal of Clinical Psychology. 7(2):99-102, 1980.

The effectiveness of medical, psychological, and combined medical and psychological therapy for childhood enuresis was comparatively evaluated. Medical therapy consisted of administration of 10mg to 25mg amitriptyline; psychological treatment consisted of placebo tablets, behavior modification techniques, and parent instruction. The combined medical and psychological therapy was found to be more effective than either treatment alone. A followup study showed that the percentage of cases cured increased with time for the psychological method and relapsed for the medical treatment. 12 references. (Author abstract modified)

002176 Spencer, J. Heathcote Hospital, 68 Duncraig Road, Applecross, Western Australia 6153 **Use of injectable lorazepam in alcohol withdrawal.** Medical Journal of Australia. 2(4):211-212, 1980.

Lorazepam, a new minor benzodiazepine tranquilizer, was given intramuscularly to 19 patients suffering from acute alcohol withdrawal. The severity of their symptoms, which included tremors, hallucinations, anxiety, delusions, anorexia, poor coordination, excessive perspiration, and insomnia, decreased rapidly. Lorazepam appears to be useful in the management of withdrawal symptoms, and more extensive trials are recommended. 14 references. (Author abstract modified)

002177 Stern, G. M.; Lees, A. J.; Shaw, K. M.; Lander, C. M. Dept. of Neurology, University College Hospital, London, England **The role of bromocriptine in the treatment of Parkinson's disease.** Advances in Biochemical Psychopharmacology. 23:267-270, 1980.

The long-term value of bromocriptine was studied in 125 patients with Parkinson's disease. Results indicated that bromocriptine was an effective, rapidly acting agent for a minority of patients with previously untreated idiopathic parkinsonism. The degree of benefit in this group was comparable to that seen in the group with conventional levodopa therapy. In patients able to take bromocriptine alone for 3 years or more, no on/off oscillations or drug-induced dyskinesias were observed. However, for the majority of parkinsonian patients facing increasing disability despite conventional levodopa therapy, bromocriptine offered little additional benefit. 7 references.

002178 Tamminga, Carol A. Experimental Therapeutics Branch, NINCDS, NIH, Bethesda, MD **Antipsychotic and antidyskinetic properties of ergot dopamine agonists.** Advances in Biochemical Psychopharmacology. 23:397-403, 1980.

The effects of the ergot dopamine agonists bromocriptine and CF-25-397 were studied in patients with chronic schizophrenia and with tardive dyskinesia induced by long-term treatment with haloperidol. Neither ergot drug diminished schizophrenic symptoms or tardive dyskinesia. Results are discussed in relation to multiple types of dopamine receptors. 32 references.

002179 Tamminga, Carol; Davis, J. M.; Crayton, John; Smith, Robert; Fann, E.; Chang, Sidney. State Psychiatric Inst., Texas Research Institute of Mental Science, Houston, TX **Pharmacologic probes into tardive dyskinesia.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 658-661).

Cholinergic influence on tardive dyskinesia was investigated by administering the cholinomimetic agents (physostigmine, choline, and deanol). The results support the view that tardive dyskinesia is essentially a dopamine receptor supersensitivity and that the administration of a dopamine agonist over time causes a stimulation of the receptor site, with loss of supersensitivity. Previous research with methylphenidate should be reexamined in light of this hypothesis. 9 references.

002180 Thal, Leon J.; Sharpless, Nansie S.; Wolfson, Leslie; Katzman, Robert. Saul R. Korey Dept. of Neurology, Albert Einstein College of Medicine, 1300 Morris Park Ave., Bronx, NY 10461 **Treatment of myoclonus with L-5-hydroxytryptophan and carbidopa: clinical, electrophysiological, and biochemical observations.** Annals of Neurology. 7(6):570-576, 1980.

Six patients with myoclonus of varying cause were treated with L-5-hydroxytryptophan (L-5-HTP) and carbidopa. While spontaneous myoclonus decreased in three of the patients and action myoclonus in four, only two patients had marked functional improvement. Side-effects included gastrointestinal and affective disturbances. L-5-HTP therapy caused a diminished frequency of paroxysmal discharges in the EEGs of three patients which did not always correlate with clinical improvement. Lumbar cerebrospinal fluid 5-hydroxyindoleacetic acid (5-HIAA) concentration after probenecid was decreased in all patients prior to therapy, but this reduction did not predict treatment response. Urinary excretion patterns for 5-HTP, serotonin, and 5-HIAA during treatment were similar in responders and nonresponders. It is concluded that while some patients with myoclonus benefit from L-5-HTP therapy, biochemical and electrophysiological tests are not useful predictors of treatment response, and the high incidence of side-effects limits the usefulness of this therapy. 31 references. (Author abstract modified)

002181 Tomson, Torbjorn; Tybring, Gunnel; Bertilsson, Leif; Ekbom, Karl; Rane, Anders. Dept. of Neurology, Sodersjukhuset, S-100 64 Stockholm 38, Sweden **Carbamazepine therapy in trigeminal neuralgia: clinical effects in relation to plasma concentration.** Archives of Neurology. 37(11):699-703, 1980.

The relationship between plasma carbamazepine concentration and clinical effects of carbamazepine was assessed among seven patients treated for trigeminal neuralgia. In the single-blind procedure, each patient was treated with carbamazepine at three dose levels, each period lasting for six days. During the last three days of each dose treatment, the pain score was determined by the patients and the plasma concentrations of carbamazepine and its epoxide metabolite were measured. As the ratio between the plasma levels of the epoxide and carbamazepine was relatively low and constant, it was not possible to evaluate the potency of the epoxide. In six of the patients studied, a plasma level effect relationship was found, with the best therapeutic effect at carbamazepine levels between 24 and 43 mcmole/L. 53 references. (Author abstract modified)

002182 Tourtellotte, W. W.; Syndulko, K.; Potvin, A. R.; Hirsch, S. B.; Potvin, J. H. Neurology Service, V.A. Wadsworth Medical Center, Wilshire and Sawtelle Blvds., Los Angeles, CA 90073 **Increased ratio of carbidopa to levodopa in treatment of Parkinson's disease.** Archives of Neurology. 37(11):723-726, 1980.

The clinical effectiveness of two ratios of carbidopa to levodopa (2:10 and 1:10 carbidopa to levodopa) in the treatment of Parkinson's disease was assessed. Twenty-nine male patients (46

to 78 years of age) with clinically definite idiopathic Parkinson's disease of mild to moderate severity were selected and hospitalized for the 3-week period of the study. Qualitative and quantitative examinations of neurologic function showed that upper extremity measurements of resting tremor, rigidity, and finger tapping speed, and lower extremity measurements of foot coordination and tandem gait (both types of speed tests) showed significantly more improvement in patients receiving the 2:10 combination than in those receiving the 1:10 combination or levodopa alone. Adverse effects were similar and minimal in each of the three groups. 23 references. (Author abstract modified)

002183 Trimble, Michael R.; Meldrum, Brian S. National Hospital for Nervous Diseases, Queen Square, London, England **Monoamines, epilepsy and schizophrenia.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 470-475).

The relationship between the ability of antidepressant drugs to alter monoaminergic transmission and their effect on the seizure threshold in epilepsy was investigated using an animal model. Findings obtained with chlorimipramine, imipramine, maprotiline, and nomifensine indicated a spectrum of the convulsant potential and demonstrated a relationship between seizure threshold and dopamine activity, such that dopamine agonists raise seizure threshold and are antiepileptic, and dopamine antagonists lower the threshold and are epileptogenic. The possibility that dopamine systems are not only related to modulation of the seizure theshold, but also to the psychotic threshold in schizophrenia was then examined. Empirical confirmation of the view would demonstrate a relationship between epilepsy and schizophrenia. 27 references.

002184 Turbott, J.; Norman, T. R.; Burrows, G. D.; Maguire, K. P.; Davies, B. M. Parkville Psychiatric Unit, Victoria, 3052, Australia **Pharmacokinetics of nortriptyline in elderly volunteers.** Communications in Psychopharmacology. 4(3):225-231, 1980.

The pharmacokinetics of nortriptyline were measured in 10 healthy elderly volunteers (66 to 79 years old, mean age 72.5 years). After a single oral 100mg dose, plasma half-life of the drug ranged from 23 to 59 hours, with a mean of 37 hours. Mean apparent volume of distribution was 31L/kg, with a range of 22 to 38L/kg. Plasma clearance of nortriptyline ranged from 18 to 67L/hour, with a mean of 37L/hour. Age was not significantly correlated with any of these parameters. 20 references. (Author abstract modified)

002185 Vaisanen, K.; Rimon, R.; Raisanen, P.; Viukari, M. Central Institute of Vaalijala for the Mentally Retarded, SF-76940 Menonpelto, Finland **A controlled double-blind study of haloperidol versus thioridazine in the treatment of restless mentally subnormal patients: serum levels and clinical effects.** Acta Psychiatrica Belgica. 79(6):673-685, 1979.

The effects of haloperidol (10 to 60mg daily) and thioridazine (100 to 600mg daily) on 30 restless mentally retarded patients were studied in a double-blind crossover trial. The subjects were monitored for motor restlessness, self-inflicted injury, hostility and aggressiveness, destruction of property, and psychotic traits. The effects of drug-free days and serum levels were also examined. The results show that mesoridazine serum levels were 5 to 6 times greater than those of thioridazine (the parent compound) and that relatively high serum levels were reached with moderate doses. Surprisingly few differences were observed between haloperidol and thioridazine treatment. Serum cholesterol was higher (p less than 0.05) at the end of thioridazine administration. Results also indicate that drug-free days can benefit many patients. 8 references. (Author abstract modified)

002186 Vaish, S. C.; Nag, D.; Kishore, Mamchandra K.; Chakravarti, S. N.; Bhargava, K. P. B. R. D. Medical College, Gorakhpur, India **A biochemical study of lumbar cerebrospinal fluid in extrapyramidal disorders.** Neurology India. 27(1):5-9, 1979.

Lumbar cerebrospinal fluid (CSF) levels of homovanillic acid (HVA) and 5-hydroxyindoleacetic acid (5 -HIA) were measured in parkinsonism patients before and after L-Dopa treatment, and in patients with other striatal syndromes (chorea and athetosis). Results from 23 patients suffering from extrapyramidal disorders (parkinsonism, rheumatic chorea, hemiathetosis) and 20 healthy control Ss indicate that HVA but not 5-HIAA concentrations were significantly lower in CSF of patients than controls. Among the parkinsonism group, patients with akinesia revealed much lower HVA levels than patients without akinesia. HVA levels among parkinsonism patients increased significantly after L-Dopa therapy. 17 references. (Author abstract modified)

002187 Vella, G.; Tatarelli, R.; Siracusano, A. II Clinique Psychiatrique, Universite de Roma, Roma, Italy /**Clinical use of sulpiride in Italy.**/ Emploi clinique du sulpiride en Italie. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 997-1002).

Sulpiride use in Italy between 1972 and 1977 is discussed. Examination of 50 studies shows a total of 2353 cases treated with sulpiride; the diagnoses include: schizophrenia, neuroses, anorexia, peptic ulcer, dermatosis, and asthma. Results of the studies indicate: a homogeneity of population, a noncontrol experimental situation, a great variety in dosage, and a lack of side effects. Use of sulpiride results in overall improvement in every syndrome but one: character disturbances. 24 references. (Author abstract modified)

002188 Vencovsky, E.; Hronek, J.; Drahokoupil, L.; Fait, V.; Hudcova, T.; Laciga, Z.; Vankova, H. PL, 334 41 Dobrany, Czechoslovakia /**Clinical experience with psychiatric treatment of the elderly involving the use of piracetam.**/ Klinicke zkusenosti s lecbou piracetamem v gerontopsychiatrii. Ceskoslovenska Psychiatrie. 76(2):89-97, 1980.

The effect of piracetam in the treatment of arteriosclerosis in elderly patients (over 65 years old) in a psychiatric clinic was studied. A total of 22 patients (average age 71) was treated with piracetam, while 21 patients (average age 76) were treated with a placebo. All the patients received complete psychiatric, internal, laboratory, neurological, and EEG tests. Clinical improvement was observed in 50% of the patients who were treated with piracetam, and in 38% of those who received a placebo. EEG tests showed a strikingly smaller share of slow synchronous activity in the group treated with piracetam. No deterioration was found after treatment with piracetam, but deterioration was found several times after administration of a placebo. It is concluded that piracetam is suitable for treatment of even relatively serious cases of organic dementia. The condition of almost half of these patients improved after short-term treatment with piracetam when treatment with other drugs did not substantially improve the patients' conditions. (Author abstract modified)

002189 Volterra, Vittorio. Inst. Discipline Psichiatriche e Sociomediche, Universita di Ancona, Ancona, Italy /**Self-medication, abandonment, manipulation, and dependence in drug therapy in psychosomatic illness: comparative polycentric research on various psychotropic drugs.**/ Automedicazione, abbandono, manipolazione e dipendenza nella farmacoterapia delle malattie psicosomatiche: indagine policentrica comparativa tra vari psicotropi. Medicina Psicosomatica. 24(4):401-414, 1979.

The use of psychopharmaceuticals in the treatment of psychosomatic illness was studied. Case histories of 600 patients from

three centers (hospital, outpatient division, and private practice) which described treatment with psychotropic agents for psychosomatic disturbances associated with digestive, cardiovascular, and respiratory systems were selected for study. The case histories were divided into two groups: 300 were concerned with patients receiving lorazepam, while the remainder were patients administered other psychotropic medication. Data pertaining to drug intake, distribution among patients, self-treatment, discontinuance of treatment, adjustment of dosage, and drug dependence were collected and evaluated. Results indicate that lorazepam was preferred by patients in self-treatment due to its good tolerance and negligible capacity for intoxication, addiction, or psychological dependence. 9 references. (Journal abstract modified)

002190 Vyborova, L.; Balastikova, B.; Misurec, J.; Drtilkova, I.; Nahunek, K. Psychiatric Clinic UJEP, Jihlavska 100, 657 15 Brno-Bohunice, Czechoslovakia **Controlled study with bromazepam and clorotepine in child instability.** Activitas Nervosa Superior. 22(3):181-182, 1980.

A double-blind, Latin square study of the effects of bromazepam and clorotepine in the treatment of the syndrome of psychomotor instability in children is described. In addition to hyperkinetic behavior, eight of the 24 children showed symptoms of enuresis, and two children were treated simultaneously for epilepsy. Both active substances reduced the global score of pathology according to the scale FKI. In individual FKI items, the drugs reduced some pathological values. Bromazepam significantly altered motor unrest, attention, motivation for school work (or play), and obedience. Clorotepine altered motor unrest, aggressiveness, adaptability to the child collective, and obedience. 1 reference.

002191 Weber, Kathleen Ann. University of Iowa **Effects of methylphenidate on operant responding in hyperactive boys. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2352-B, 1980. Ann Arbor, Univ. Microfilms No. 8028304, 117p., 1980.

The influence of predrug baseline rates of responding on the effects of methylphenidate on operant responding rates in hyperactive boys was assessed. Dose-related decreases from high baseline rates and increases from low baseline rates were predicted. A multiple FR-DRL schedule was used to generate high and low rates of responding on a simple operant task, using nickels as reinforcers, with a counterbalanced, double-blind administration of three dosage levels of methylphenidate. Contrary to predictions, FR rates increased with increasing dose and DRL rates were unaffected. However, consistent with the rate dependency hypothesis, lower baseline Ss increased their response rates, while higher baseline Ss decreased or did not change their rates. As dose increased, number of discrimination errors decreased linearly and number of reinforcers earned increased linearly. (Journal abstract modified)

002192 White, James H. 17822 Beach Boulevard, Suite 437, Huntington Beach, CA 92647 **Psychopharmacology in childhood: current status and future prospectives.** Psychiatric Clinics of North America. 3(3):443-453, 1980.

The status of childhood psychopharmacology is discussed for the disorders of: hyperactivity (attention deficit disorder); enuresis; disorders of sleep; anxiety state; depressive state; symptoms of psychotic disturbance of childhood; schizophrenic symptoms in adolescence; school refusal syndrome; aggression; and Gilles de la Tourette sydrome. It is stressed that no psychotropic drugs should be used in children without identifying appropriate target symptoms and selecting the drugs to which the symptoms are likely to respond. Close followup is essential, with regularly scheduled drug-free trials, so that drugs are not used any longer than necessary. Treatment should not be withheld when it can prevent continued academic and social failure. 36 references.

12 PSYCHOTOMIMETIC EVALUATION STUDIES

002193 Bird, K. D.; Boleyn, T.; Chesher, G. B.; Jackson, D. M.; Starmer, G. A.; Teo, R. K. C. Chesher: Dept. of Pharmacology, University of Sydney, N.S.W. 2006, Australia **Intercannabinoid and cannabinoid-ethanol interactions and their effects on human performance.** Psychopharmacology. 71(2):181-188, 1980.

The effects of cannabinoids and ethanol were determined through a battery of perceptual, cognitive and motor function tests in human volunteers after oral administration. Delta9-tetrahydrocannabinol (THC, 215mcg/kg) produced significant decrements in general performance, standing steadiness, reaction speed, and psychomotor performance, as well as increased pulse rates, conjunctival hyperemia, and alterations in subjective assessment of intoxication. Ethanol produced similar decrements, but its psychomotor effects were more rapid in onset. Cannabidiol (CBD, 320mcg/kg) and cannabinol (CBA, 320mcg/kg) showed no systematic effects. The combined effects of THC and ethanol were greater than those of THC alone, but CBD and CBN did not modify the effects of THC or ethanol. 33 references. (Author abstract modified)

002194 Braff, David L.; Geyer, Mark A. Dept. of Psychiatry, School of Medicine, University of California, San Diego, M-003, La Jolla, CA 92139 **Acute and chronic LSD effects on rat startle: data supporting an LSD-rat model of schizophrenia.** Biological Psychiatry. 15(6):909-916, 1980.

The effect of acute and chronic lysergic acid diethylamide (LSD) on rat startle, a widely-used behavioral measure of reactivity and habituation, was examined to evaluate arguments against the use of the LSD rat model of human schizophrenia. Challenges to this animal model have argued that while schizophrenia can be chronically debilitating, animal and human effects of LSD exhibit behavioral tolerance following chronic administration of this hallucinogenic drug. The results suggest that behavioral tolerance after chronic LSD administration is incomplete, with tolerance exhibited to the acute impairment of habituation, but potentiation of startle magnitude on both the first response and the first block of 30 trials. These results are interpreted as supporting the viability of LSD as a model for one or more of the group of schizophrenias. 15 references. (Author abstract modified)

002195 Chen, A. C. N.; Chapman, C. R. Dept. of Anesthesiology, University of Washington, RN-10, Seattle, WA 98195 **Aspirin analgesia evaluated by event-related potentials in man: possible central action in brain.** Experimental Brain Research. 39(4):359-364, 1980.

The effects of aspirin (975mg) on brain electrical potentials evoked by painful electrical tooth shocks were studied in 30 healthy male volunteers. Aspirin significantly reduced the amplitude of the late waveform components, but did not affect the earlier components. Since early waveform components reflect energy transmission and late components reflect perception of painful information, these findings suggest that aspirin may act centrally in pain processing. 64 references. (Author abstract modified)

002196 Fairbairn, J. W.; Pickens, Joan T. Dept. of Pharmacognosy, School of Pharmacy, University of London, 29-39 Brunswick Square, London WC1N 1AX, England **The effect of conditions influencing endogenous prostaglandins on the activity of delta'-tetrahydrocannabinol.** British Journal of Pharmacology. 69(3):491-493, 1980.

The cataleptic effect of delta'-tetrahydrocannabinol (THC) was reduced in mice maintained on a fat-free diet, which was deficient in the prostaglandin precursor arachidonic acid (AA). The THC effect was restored by i.p. injection of AA or by return to a normal diet. The cataleptic effect of THC was enhanced in mice with yeast-induced fever, which increased prostaglandin synthesis. Exposure to cold, which depleted prostaglandins, reduced the effect of THC. 6 references. (Author abstract modified)

002197 Janssen, Paul A. J.; Tollenaere, Jan P. Janssen Pharmaceutica Research Laboratories, Beerse, Belgium **Stereochemical anatomy of morphinomimetics.** Advances in Biochemical Psychopharmacology. 20:103-129, 1979.

Stereochemical features of morphinomimetics are discussed, based on X-ray crystallographic data. The structure of 4-phenylpiperidines, thebaines, morphinans, benzomorphans, 3,3-diphenylpropylamine derivatives, 1,2-diamine and 1,3-diamine derivatives, and other narcotic analgesics is described. The conformation of the opiate receptor and endogenous opioids is also considered. 109 references.

002198 Kemali, M.; Kemali, D. Laboratorio di Cibernetica del CNR, I-80072 Arco Felice, Naples, Italy **LSD induced ultrastructural modifications of limbic system nuclei and other cerebral zones.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 257-267).

The effect of the intravenous, intramuscular, and intraventricular administration of LSD on the frog (Rana esculenta) was studied. One dose of 1mg/kg permitted visualization of omega-shaped fusion of synaptic vesicles with the presynaptic membrane in synapses of the habenular nuclei (prominent limbic structures which appear to be interconnected with the dopaminergic mesolimbic and mesocortical pathways). The exocytotic profiles appear only in those synapses with clear spherical vesicles. LSD also induces the reversible production of lipid-like droplets and alteration of the ciliary apparatus in selected zones of the ventricular surfaces. The results show that LSD causes structurally identifiable changes in the frog brain, as observed via the microscope. 17 references. (Author abstract modified)

002199 Krippner, Stanley. 79 Woodland Road, Fairfax, CA 94930 **Psychedelic drugs and the creative process.** Humanistic Psychology Institute Review. 2(2):9-34, 1980.

A review is presented of major studies performed to date concerning the effects of psychotropic (psychedelic) drugs on creativity. Following a brief account of drug use for enhancing creativity down through history, five studies of the effects of psychedelics upon artists are reviewed (Berlin, Guthrie, Weider, Goodell, and Wolff, 1955; Barron, 1963; Janiger, 1959; Leary, 1963; and Hartman as reported in Kipphoff, 1969), as is one study of the effects of mescaline upon the creativity of professionals in architecture, engineering, commercial art, furniture design, mathematics, and physics (Harman, McKin, Mogar, Fadiman, and Stolarodd, 1966). Two studies of the effects of lysergic acid diethylamide (LSD) upon creativity of unselected students (nonartists) are also discussed (Zeagan, Pollard and Brown, 1967; McGlothlin, Cohen, and McGlothlin, 1967). Two studies conducted by Krippner (1969, 1970, 1977; 1969) are then described. In conclusion, various interpretations of the reported effects of psychedelic drugs upon creativity are considered. 47 references. (Author abstract)

002200 Mediavilla, Jose Luis. no address **/The mythologem of confrontation of endogenous delirium with delusions in psychedelic experiences./** El mitologema de la analitica de los delirios endogenos con los contenidos delirantes de las experiencias psicodelicas. Revista de Psiquiatria y Psicologia Medica de Europa etc. 14(6):95-99, 1980.

The idea of patient passes in his process of self-orientation within the new being caused by psychosis is discussed based on five cases. All five patients had been dead and were later revived. Sarro pointed out the importance of these mythologems as having a transbiographic and ahistorical reality. In an experiment done in Maryland, generally somatic patients were given LSD and DPT in order to alleviate emotional and physical suffering and to explore the death/resurrection experience. These patients experienced episodes remarkably similar to those described in the mythology of various cultures. These findings confirm Sarro's theory, and they leave an interesting area for research. 3 references.

002201 Ohlsson, A.; Lindgren, J.-E.; Wahlen, A; Agurell, S.; Hollister, L. E.; Gillespie, H. K. Hollister: VA Medical Center, 3801 Miranda Ave., Palo Alto, CA 94304 **Plasma delta9-tetrahydrocannabinol concentrations and clinical effects after oral and intravenous administration and smoking.** Clinical Pharmacology and Therapeutics. 28(3):409-416, 1980.

Delta9-tetrahydrocannabinol (THC) was given intravenously, in chocolate cookies, or in cigarettes to 11 healthy Ss. Plasma profiles were similar after i.v. injection and smoking, but were low and irregular after oral ingestion, indicating slow and erratic absorption. Reddened conjunctivae persisted as long as THC levels were above 5mg/ml; tachycardia was a less reliable masurement of prevailing THC levels or high. The appearance of the clinical high lagged behind the increase in plasma concentrations, suggesting brain concentrations were increasing as plasma concentrations decreased. Clinical effects had slower onset and longer duration and occurred at much lower plasma levels afer oral ingestion of THC than after i.v. or inhaled THC. 21 references. (Author abstract modified)

002202 Stark-Adamec, Cannie; Pihl, R. O.; Adamec, Robert E. Scott Laboratory, Wellesley Hospital, 160 Wellesley Street East, Toronto, Ontario, Canada M4Y 1J3 **Contributions of individual differences to subjective intoxication.** Psychological Reports. 47(3, Part 1):863-869, 1980.

The relationships between individual difference variables (personality, background, and drug history) and subjective level of intoxication on coltsfoot, placebo, and marihuana were investigated in 24 male volunteers. Previous research has shown that, while the relationships between personality and drug history are not particularly impressive, background, drug history, and expectancy are related to specific aspects of the marihuana intoxication experience. Pearson product-moment correlations were strongest on coltsfoot and placebo. Thus, extrapharmacological variables exerted the greatest influence when the active agent was absent; personality and background variables contributed least to subjective intoxication levels when the drug was actually present. Prosocial dimensions of personality (e.g., playful, pleasure seeking, socially active, easy going) and experience with lysergic acid diethylamide were most strongly related to subjective level of intoxication. Implications for cannabis research are considered. 13 references. (Author abstract modified)

13 MECHANISM OF ACTION: PHYSIOLOGICAL, BIOCHEMICAL AND PHARMACOLOGICAL

002203 Akpinar, S. Gulhane Medical Academy, Ankara, Turkey **Discovery of psychotropic drugs by means of computer-analyzed EEG.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1312-1316).

The CNS effects of lisuride, a migraine prophylactic, were investigated using quantitative computer-analyzed EEG. Despite earlier findings of no such effects, the results indicate that this psychotropic drug has significant CNS effects after single and multiple oral dosages, as observed in studies with five migraine patients in a double-blind design with placebo control. Some similarity in CEEG profiles between lisuride and psychostimulants such as dextroamphetamine, methylphenidate, and isocarboxazid were noted. Pizotifen, cyproheptadine, mianserin, and amitriptyline have different EEG profiles and are similar to the antidepressant drugs. A dopamine agonistic action has also been noted, and some effectiveness has been noted in treating parkinson patients. 6 references.

002204 Alkalay, David; Wagner, William E., Jr.; Carlsen, Stephen; Khemani, Lakshmi; Volk, Joseph; Bartlett, M. Fred; LeSher, Anne. Ciba-Geigy Pharmaceutical Corp., 444 Saw Mill River Road, Ardsley, NY 10520 **Bioavailability and kinetics of maprotiline.** Clinical Pharmacology and Therapeutics. 27(5):697-703, 1980.

The bioavailability and kinetics of maprotiline were studied in six male patients given a single 50mg tablet of maprotiline hydrochloride and an isotope labeled maprotiline hydrochloride solution. Blood samples from each S were analyzed simultaneously for labeled and unlabeled drug to overcome problems of interindividual variability and permit use of a small group of Ss. Peak levels, biologic half-lives, volumes of distribution, blood clearances, lag times, and absorption rate constants are reported. 21 references. (Author abstract modified)

002205 Allain, H.; Reymann, J. M.; Bentue-Ferrer, D.; Pape, D.; van den Driessche, J.; Sabouraud, O. Laboratoire de Pharmacologie, Faculte de Medecine, Avenue du Professeur Leon-Bernard, F-35043 Rennes, France **The use of bromocriptine for testing central dopaminergic reactivity.** Psychopharmacology. 70(3):313-315, 1980.

The use of bromocriptine for testing central dopaminergic (DA) reactivity is discussed. It is noted that a single oral intake of 10mg bromocriptine can modify both plasma renin activity (PRA) and arterial blood pressure (BP), the changes in both depending on the integrity of the central DA systems. Parkinsonian patients whose extrapyramidal symptoms are markedly improved by L-dopa in association with a decarboxylase inhibitor (IDC) and untreated Parkinsonian patients are the only patients whose PRA and BP are lowered 1 hr after bromocriptine ingestion. Results obtained in the L-dopa-induced dyskinetic parkinsonian patients are similar to those obtained in the group of L-dopa-resistant patients. This points to the paradoxical hypothesis of dopaminergic hyposensitivity in the dyskinetic patients. Despite the absence of correlation between PRA and BP, it is possible that lowering of BP by bromocriptine is linked to the parallel decrease of PRA. An increase of the BP may be obtained in the dyskinetic and L-dopa resistant groups. These data point to a possible involvement of central DA systems in some aspects of hypertension. 18 references. (Author abstract modified)

002206 Allen, Marcia Divoll; Greenblatt, David J. Greenblatt: Div. of Clinical Pharmacology, Box 1007, New England Medical Center Hospital, 171 Harrison Ave., Boston, MA 02111 **Comparative protein binding of diazepam and desmethyldiazepam.** Journal of Clinical Pharmacology. 20(11-12):639-643, 1980.

Equilibrium dialysis was used to study plasma protein binding of diazepam (DZ) and desmethyldiazepam (DMDZ) in plasma samples from 62 nonfasting, unheparinized volunteers, aged 20 to 85 years. The free fraction for DZ averaged 1.48% and increased with age. DMDZ was also extensively bound. The mean free fatty acid was 2.97% and increased with age. Free fatty acid for DZ and DMDZ were negatively correlated with plasma albumin concentration. Free fatty acid for DMDZ always exceeded that for DZ. 14 references.

002207 Axelsson, R.; Martensson, E. Psychiatric Dept. III, Lillhagen's Hospital, University of Goteborg, S-422 03 Hisings Backa, Sweden **On the clinical pharmacokinetics of thioridazine and its metabolites.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 955-958).

The clinical pharmacokinetics of thioridazine and of its main nonconjugated metabolites were investigated in over 500 psychiatric patients. Serum concentration and concentrations of the unbound drug were determined. The results indicated that: 1) nearly all thioridazine in serum is protein bound; 2) interindividual variations in clinical response occur, partly due to interindividual variations in pharmacokinetic parameters; 3) the serum concentrations of unbound thioridazine are the most adequate predictor of the drug's antipsychotic effect; and 4) no correlations occurred between mean dose and clinical effect or between total serum concentration and clinical effect. 15 references. (Author abstract modified)

002208 Beck, Olof; Hesselgren, Torbjorn. Dept. of Toxicology, Karolinska Institute, S-104 01 Stockholm, Sweden **Method for the determination of tryptophan in serum and cerebrospinal fluid.** Journal of Chromatography, Biomedical Applications. 181:100-102, 1980.

A simple and rapid method for the determination of tryptophan (Trp) in serum and cerebrospinal fluid (CSF), based on the high performance liquid chromatography (HPLC)/fluorimetric system, is described. The chromatograms from the analysis of Trp (free and total) in human serum and CSF showed that no interfering peaks are present. The determination of total serum Trp involved precipitation of serum proteins. To correct for losses, alpha-methyltryptophan was used as an internal standard. The data from the determination of the reproducibility was used as an internal standard. The data from the determination of the reproducibility of individual analyses show that the total serum Trp and CSF Trp can be determined with experimental errors of less than 4%. The determination of the free Trp portion in serum showed a greater variability (11%), which was induced by the ultrafiltration. 2 references.

002209 Benowitz, Neal L.; Nguyen, Trong-Lang; Jones, Reese T.; Herning, Ronald I.; Bachman, John. Langley Porter Institute, University of California, 401 Parnassus Ave., San Francisco, CA 94143 **Metabolic and psychophysiologic studies of cannabidiol-hexobarbital interaction.** Clinical Pharmacology and Therapeutics. 28(1):115-120, 1980.

Oral cannabidiol (CBD, 600mg/day for 5 to 12 days) inhibited hexobarbital metabolism in 10 Ss. Hexobarbital oral clearance was 36% lower and apparent volume of distribution was 35% smaller, with no change in half-life. In four Ss given intravenous and oral hexobarbital, systemic clearance was 36% lower and bioavailability was 10% greater during CBD. Hexobarbital increased fatigue and tremor, impaired eye tracking performance, and altered the EEG. CBD did not alter these effects. 27 references. (Author abstract modified)

002210 Berglund, Mats; Risberg, Jarl. Dept. of Psychiatry, University Hospital, Lund, Sweden **Regional cerebral blood flow in a case of amphetamine intoxication.** Psychopharmacology. 70(3):219-221, 1980.

The regional cerebral blood flow was measured (133Xe inhalation method) during acute amphetamine intoxication in a male 25-year-old addict. During the study, the patient displayed

symptoms of paranoia and slight euphoria and tension. The flow level was found to be elevated by about 30% compared to a study in nonintoxicated state. The augmentation was most marked in the left hemisphere and in frontal regions (local increases up to 100%). Results confirm earlier findings in animal models and indicate the central role of frontal cortical structures in the production of psychotic symptoms. 15 references. (Author abstract)

002211 Bertler, Ake; Lindgren, Sune; Malmgren, Harry. Dept. of Clinical Pharmacology, University Hospital, University of Linkoping and AB Leo, Helsingborg, Sweden **Pharmacokinetics of dipotassium chlorazepate in patients after repeated 50mg oral doses.** Psychopharmacology. 71(2):165-167, 1980.

Plasma concentrations of N-desmethyldiazepam (DMD) were determined in 10 patients given 50mg dipotassium chlorazepate once daily until steady-state was reached. The mean values (at steady-state) of the plasma half-life, elimination coefficient, steady-state concentration, and apparent volume of distribution were 44 hours, 0.0184/hour, 1590ng/ml, and 1.41/kg, respectively. There was no tendency toward dose dependent elimination and the elimination of DMD was demonstrated to be a first-order pharmacokinetic reaction even at doses of 50mg/day. 2 references. (Author abstract modified)

002212 Birch, N. J.; Greenfield, A. A.; Hullin, R. P. Dept. of Biochemistry, University of Leeds, 9 Hyde Terrace, Leeds LS2 9LS, England **Pharmacodynamic aspects of long-term prophylactic lithium.** International Pharmacopsychiatry. 15(2):91-98, 1980.

In 90 male and female patients suffering from recurrent affective disorders, who had been stabilized for long periods on lithium carbonate, an investigation was carried out to determine factors influencing the dosage and excretion of lithium. The findings support the view that lithium secretion is largely controlled by osmotic factors and that it is a function of both body surface area and weight, which are closely correlated with measures of renal efficiency, although there are also age and sex differences which are independent of body size. 23 references. (Author abstract)

002213 Blankstein, J.; Reyes, F. I.; Winter, J. S. D.; Faiman, C. Faiman: G449-Health Sciences Centre, 700 William Avenue, Winnipeg, Manitoba R3E 0Z3, Canada **Effects of naloxone upon prolactin and cortisol in normal women.** Proceedings of the Society for Experimental Biology and Medicine. 164(3):363-365, 1980.

To assess whether endogenous opioids are involved in the regulation of prolactin and adrenocorticotropic hormone (ACTH), the effects of i.v. administration of naloxone to 10 normal women were studied. In six of these Ss, a saline control study (randomized design) was also performed. There was no change in serum prolactin following naloxone or saline. In contrast, naloxone resulted in an increment in serum cortisol from a mean of 8.7mcg/dl prior to treatment to a peak of 12.7mcg/dl at 60 min. Values between 45 and 75 min were significantly higher than those following saline injection. The increment of cortisol following naloxone administration suggests the presence of an inhibitory opioid influence upon basal ACTH secretion in man. 25 references. (Author abstract modified)

002214 Brinkschulte, Maria; Breyer-Pfaff, Ursula. Breyer-Pfaff: Institut fur Toxikologie, Universitat Tubingen, Wilhelmstrasse 56, D-7400 Tubingen, West Germany **The contribution of alpha1-acid glycoprotein, lipoproteins, and albumin to the plasma binding of perazine, amitriptyline, and nortriptyline in healthy man.** Naunyn-Schmiedeberg's Archives of Pharmacology. 314(1):61-66, 1980.

Equilibrium dialysis was used to study the binding of perazine (PER), amitriptyline (AT), and nortriptyline (NT) to plasma and single plasma proteins from healthy volunteers. The highest affinity and lowest capacity toward all three drugs was exhibited by alpha1-acid glycoprotein, which contributed 43% to total binding of PER, 49% to AT, and 31% to NT. Fractions bound to total lipoproteins were 32% for PER, 40% for AT, and 52% for AT. Binding to combinations of alpha1-acid glycoprotein, lipoproteins, and albumin exceeded that to plasma with PER but not with AT and NT. 28 references. (Author abstract modified)

002215 Burgess, Carl D.; Montgomery, Stuart A.; Montgomery, Deidre B.; Wadsworth, Jane. University of Southampton, Hampshire, England **Cardiovascular effects of amitriptyline, mianserin and zimelidine in depressed patients.** Progress in Neuro-Psychopharmacology. 4(4/5):523-526, 1980.

The effects of amitriptyline, mianserin, and zimelidine on the systolic time intervals (STI) and on the high speed surface electrocardiogram (ECG) were studied in depressed patients. Amitriptyline increased preinjection period index (PEPI) and the PEP/left ventricular ejection time (LVET) ratio of the STI. It also increased heartrate significantly and prolonged Q/T interval. Mianserin shortened QS2I and LVETI. Zimelidine did not affect the STI but tended to decrease heartrate and prolong the Q/T interval. Results indicate that amitriptyline decreased cardiac contractility and confirm the quinidine-like action of the tricyclic antidepressants. The changes brought about by mianserin are probably due to effects on the peripheral circulation rather than a direct action on the heart. 23 references. (Author absstract modified)

002216 Carman, Jonn S.; Crews, Eugene L.; Wyatt, Edwina S.; Dohn, Henry H.; Hall, Kenneth R. Dept. of Psychiatry, University of Alabama Medical Center, Birmingham, AL 35233 **Prediction of response to psychotropic medications.** Alabama Journal of Medical Sciences. 17(2):161-165, 1980.

Problems in predicting response to psychotropic medications are discussed, along with, the need for a predictor which is readily available and inexpensively quantifiable for use before psychiatric treatment is initiated, or early in the program. Experience in the use of two biological measures in predicting drug response is recounted. These include dexamethasone suppression (used with severe depression presented as schizoaffective illness or catatonic schizophrenia) and lithium ratio studies (used with diagnoses of manic, bipolar manic or schizoaffective manic conditions excited catatonic, or paranoid schizophrenia). 33 references.

002217 Clarenbach, P.; Del Pozo, E.; Brownell, J.; Heredia, E.; Spiegel, R.; Cramer, H. Dept. of Neurology, University of Freiburg, Freiburg, West Germany **Characterization of ergot and non-ergot serotonin antagonists by prolactin and growth hormone profiles during wakefulness and sleep.** Brain Research. 202(2):357-363, 1980.

To further clarify the involvement of serotonin in the control of secretion of pituitary lactogens, diurnal and sleep prolactin (PRL) and growth hormone (GH) profiles were investigated in healthy Ss treated with ergot and nonergot serotonin antagonists. A group of 10 Ss received a single oral dose of 2mg each of pizotifen, methysergide, and the dopaminegic drug bromocriptine as reference substance, in comparison with placebo. Another group of 10 Ss received either a placebo, 2.5mg bromocriptine twice daily for 4 days or pizotifen 0.5mg three times daily for 12 days before undergoing EEG recording and blood samples during night sleep. Results indicate the presence in the ergot molecule of a dopaminergic moiety responsible for PRL inhibition and GH stimulation. This effect is independent of the

serotonin active component of the drug. 20 references. (Author abstract modified)

002218 Constantinidis, J.; Tissot, R. Tissot: Clinique Psychiatrique, Universite de Geneve, Div. de Psychopathologie Morphologique, 1225, Chene-Bourg, Switzerland /**Mechanisms of action of the antidepressants.**/ Mechanismes d'action des antidepresseurs. Encephale. 5(5, Suppl.):689-700, 1979.

Mechanisms of antidepressant action and implications concerning the effect of antidepressants on monoamine performance are considered. The tricyclic and related antidepressants reduce monoamine reuptake at the synapses, block the presynaptic receptors, and, after chronic administration, act on the synthesis of the monoamines and the sensitivity of the postsynaptic receptors. The noradrenaline (NA) and serotonin (5-HT) synapses are influenced to different degrees by the antidepressants. For example, desipramine has a preponderance of activity at NA synapses and clomipramine at 5-HT synapses. By combining these findings and by highlighting some of these properties, it is possible to come to diametrically opposite conclusions concerning the effect of the antidepressants on monoamine performance and to develop many models of mechanisms of antidepressant action. 43 references. (Journal abstract modified)

002219 Costa, Jonathan L.; Eanes, E. D.; Fay, Denise D.; Hailer, Arthur W. Clinical Neuropharmacology Branch, NIMH, Bldg. 10, 3D-41, Bethesda, MD 20205 **Quinacrine and serotonin binding by synthetic models for human-platelet dense bodies: evaluation of the role of binding in amine storage. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 12 p.

The possibility that serotonin (5HT) and quinacrine are complexed to the core material of dense bodies was investigated in an examination of their binding by synthetic precipitates with a composition essentially identical to that of the dense body core. The extent of 5HT binding was similar to that observed with the monovalent cations lithium and potassium, and binding of both 5HT and quinacrine was nonspecific and nonsaturable over a range of physiologic concentrations at which loading of dense bodies occurs. For both amines, the amount of material bound per mg of solid was approximately 1000 times less than would be required to account for in vivo storage in dense bodies. Direct binding to the dense body core thus does not appear to play a significant role in amine storage by human platelets. 15 references. (Author abstract modified)

002220 Costall, B.; Naylor, R. J. Postgraduate School of Studies in Pharmacology, University of Bradford, Bradford, BD7 1DP, England **Neuropsychopharmacological studies on some benzamide derivatives.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1006-1008).

The actions of three benzamide compounds (metoclopramide, sulpiride, and tiapride) and other reference benzamides (sultopride, clebopride and AHR6092) were investigated in test systems designed to detect an ability to inhibit dopamine function. Emphasis was on neuropsychopharmacological characteristics, and initial classical tests for neuroleptic activity, catalepsy production, and stereotypy antagonism were conducted. More sophisticated techniques to analyze drug action in specific brain regions used the intracerebral injection technique. In the clinical condition, the benzamide derivatives would be administered by a peripheral route, and it was considered that the low potency of some agent to antagonize central effects may reflect a reduced ability to penetrate the blood-brain barrier. The variability of benzamide derivatives to apparently influence cerebral dopamine function on peripheral administration in animals, and the differing activity spectra of the benzamides in the clinic, suggests an ability to penetrate specified cerebral tissue. 7 references.

002221 Cutler, Neal R.; Post, Robert M.; Bunney, William E., Jr. Section on Psychobiology, Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Apomorphine hypothermia: an index of central dopamine receptor function in man.** Communications in Psychopharmacology. 3(5):375-382, 1979.

Diurnal variations in the effects of apomorphine were studied in psychiatric and normal control Ss. The hypothermic effects of apomorphine were greater after subcutaneous injection (0.75mg) in the evening than after morning injection. Ratings of mood, nausea, shivering, and activation level showed no diurnal variation. Results suggest that the hypothermic response to apomophine may serve as an index of dopamine receptor function. 23 references. (Author abstract modified)

002222 Davis, G. C.; Buchsbaum, M. S.; Naber, D.; van Kammen, D. P. Biological Psychiatry Branch, Building 10, Room 2N212, Bethesda, MD 20205 **Effect of opiates and opiate antagonists on somatosensory evoked potentials in patients with schizophrenia and normal adults.** In: Perris, C., Clinical neurophysiological aspects of psychopathology. New York, S. Karger, 1980. 192 p. (p. 73-80).

Pain sensation was measured with psychophysical and somatosensory evoked potentials (EPs) in 17 schizophrenic patients and 16 normal volunteers to test the hypothesis that these measurements can provide a useful measure of endorphin effects that might identify a subgroup of schizophrenics responsive to treatment with opiate antagonists. Both signal detection measures and EP amplitude/intensity functions reflect significantly increased insensitivity in the 17 schizophrenics. The similarities between opiate effects, individual differences in pain sensitivity, and schizophrenia extend beyond a single psychophysical index or a single EP amplitude measurement. The similarity of morphine effects in the volunteers' EPs to the schizophrenic patients' EPs, and the similarity of the volunteers' EPs to those of the schizophrenics on naltrexone are additional presumptive evidence for a role for endorphins in schizophrenia. 15 references.

002223 Delwaide, Paul-J. Institut de Medecine, Hopital De Baviere, boulevard de la Constitution 66, B-4020 Liege, Belgium / **The treatment of buccolinguofacial dyskinesia in the elderly: the choice of a neuroleptic agent.**/ Le traitement des dyskinesies bucco-linguo-faciales chez le vieillard: quels neuroleptiques choisir?/ Psychologie Medicale. 12(12):2623-2626, 1980.

The comparative effectiveness of thioproperazine and tiapride in the treatment of buccolinguofacial dyskinesia was studied. Thirty-five Ss received either tiapride (3 X 100mg/day), thioproperazine (3 X 3mg/day), or a placebo for a period of 15 days. There was a one-week period without medication, and then treatment was started again, but with a different medication than taken previously. Statistical analysis of the results shows that the results of tiapride compared to the placebo are highly significant; results of tiapride compared to thioproperazine show a significant difference in favor of the latter. However, tolerance for tiapride is better. 6 references.

002224 Desmond, P. V.; Patwardhan, R. V.; Schenker, S.; Hoyumpa, A. M. Hoyumpa: Veterans Administration Medical Center, 1310 24th Avenue South, Nashville, TN 37203 **Short-term ethanol administration impairs the elimination of chlordiazepoxide (Librium) in man.** European Journal of Clinical Pharmacology. 18(3):275-278, 1980.

The effect of acute ethanol ingestion on the disposition and elimination of chloradiazepoxide (Librium) was studied. Five healthy, 22 to 39-year-old male volunteers ingested ethanol

0.8g/kg at 25% in orange juice 1 hour before chlordiazepoxide 0.6mg/kg was injected intravenously. To maintain plasma ethanol concentrations of 50 to 150mg/100ml for 32 hours, additional ethanol 0.5g/kg was given orally every 5 hours. Plasma clearance, volume of distribution, and plasma binding were determined. The plasma level of the metabolite desmethylchlordiazepoxide was higher and its elimination slower after ethanol. It is concluded that short term ethanol ingestion in moderate doses impairs the elimination of chlordiazepoxide and accounts, at least partly, for greater sedation than results when ethanol is taken concomitantly. 33 references. (Author abstract modified)

002225 DeVane, C. Lindsay; Wolin, Richard E.; Jusko, William J. Dept. of Pharmaceutics, School of Pharmacy, State University of New York, Buffalo, NY 14209 **Pharmacokinetic basis for predicting steady-state serum drug concentrations of imipramine from single dose data.** Communications in Psychopharmacology. 3(5):353-357, 1979.

Pharmacokinetic theory was used to predict the maintenance doses of imipramine required to achieve a targeted steady-state concentration, based on a single serum concentration value obtained after a test dose. Results were only in partial agreement with experimental data. Simulations produced apparent linearity only over a limited range of serum concentrations. Experimental data for a 100mg daily maintenance dose coincided with the theoretical curve at low concentrations, but diverged for patients with slower elimination rates and higher plasma drug concentrations after the first dose. 10 references. (Author abstract modified)

002226 Dotti, Andrea; Lauro, Renato; Bersani, Giuseppe; Camagna, Antonio; Spallone, Livio. Istituto di Clinica Psichiatrica I, Universita di Roma, Rome, Italy **/Study of prolactin variations in psychiatric patients treated with fluphenazine decanoate./** Studio sulle variazioni della prolattinemia in pazienti psichiatrici trattati con decanoato di flufenzaina. Rivista di Psichiatria. 14(3):176-184, 1979.

The utilization of prolactin variations, subsequent to the administration of fluphenazine decanoate, was studied. Twenty patients diagnosed as schizophrenic, who were previously treated with neuroleptics, were administered 25mg of fluphenazine decanoate every 5 days for a duration of 32 days. The prolactin variations were measured every 20 days for the same time period. Results indicate that prolactin increase was present in all patients administered fluphenazine decanoate, although there was a great variation among patients in the prolactin response to the neuroleptic. It is suggested that a tolerance to the neuroleptic drug was developed in the hypothalamus and hypophysical axis. 17 references. (Journal abstract modified)

002227 Duhm, Jochen; Becker, Bernhard F.; Greil, Waldemar. Physiologisches Institut, Pettenkoferstr, 12, Nussbaumstr. 7, Universitat Muchen, D-8000, Munchen 2, West Germany **Na-dependent Li-countertransport and the lithium distribution across the human erythrocyte membrane: introduction.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/ North Holland, 1979. 835 p. (p. 1137-1142).

The pathways of lithium ion (Li) transport cross the erythrocyte membrane namely the Na-Li countertransport system, the Na-K pump, and the two leak pathways, are described, and their contribution to the establishment of the steady-state Li distribution between red cells and plasma is discussed. Within individuals, the carbonate and K concentration, as well as the pH, are plasma factors that can alter the distribution. The interindividual variability, however, is caused by differences in the maximum activity of the Na-Li countertransport system. The variability is similar among healthy volunteers and patients suffering from affective disorders, and at present it does not seem justified to regard a low or high activity of the Na-Li countertransport system as abnormal. The Na-Li countertransport is probably mediated by an ouabain resistant Na-Na exchange system present in most organs, including brain, muscle, and erythrocytes. (Author abstract modified)

002228 Dunner, David L.; Meltzer, Herbert L.; Fieve, Ronald R. New York State Psychiatric Institute, New York, NY **Clinical aspects of lithium efflux from erythrocytes.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/ North Holland, 1979. 835 p. (p. 1148-1152).

The rate of constant for efflux of lithium from human erythrocytes against a lithium gradient (ko) was studied in erythrocytes from psychiatric patients and controls. The data suggest that ko is stable over time within individual patients. Further, ko is reduced with lithium treatment and its further reduction is a useful indicator of lithium toxic states. There is a high correlaton of ko among genetically related individuals, suggesting that ko may be in part genetically determined. There was no difference for ko with age, sex, or diagnosis of depression or manic depression subtype. Patients with primary affective disorder had the same mean ko as psychiatrically well controls. However, the degree of inhibition of ko with lithium treatment may relate to lithium prophylactic outcome. 10 references. (Author abstract modified)

002229 Elsass, Peter; Hendel, Jorn; Hvidberg, Eigill F.; Hansen, Tage; Gymoese, Erik; Rathje, Jorgen. Hvidberg: Dept. of Clinical Pharmacology, Rigshospitalet, Copenhagen, Denmark **Kinetics and neuropsychologic effects of IV diazepam in the presence and absence of its active N-desmethyl metabolite in humans.** Psychopharmacology. 70(3):307-312, 1980.

In 12 healthy volunteers, the kinetics and neuropsychological actions of i.v. diazepam (DZ) (single dose) were studied with and without the presence of its main metabolite N-desmethyldiazepam (NDDZ). Both the maximal plasma concentration and the steepness of the alpha slope were correlated with variations in the corresponding continuous reaction time (CRT). EEG profiles, CRT and clinical ratings for anxiety and sedation all showed significant changes between the situations with the metabolite present or absent, but no significant correlation could be found with the kinetic pattern of DZ in the two situations. Tolerance to NDDZ did not develop. Results indicate that the presence of the active metabolite changes the pharmacodynamic profile of the parent compound probably by an interaction at the receptor site between DZ and NDDZ. Changes in the spectrum of effects during long-term therapy with DZ may, therefore, partly be explained in this way. 23 references. (Author abstract modified)

002230 Elsworth, J. D.; Glover, Vivette; Sandler, M. Sandler: Bernhard Baron Memorial Research Labs., Queen Charlotte's Maternity Hospital, London W6 OXG, England **Tele-methylhistamine is a specific MAO-B substrate in man.** Psychopharmacology. 69(3):287-290, 1980.

Tele-methylhistamine, the first metabolite of histamine in tissues which lack diamine oxidase, is shown to be a substrate for human monoamine oxidase type-B (MAO-B). Human liver homogenates were incubated with 3H-tele-methylhistamine and the products separated using thin layer chromatography. The major product was 3-methylimidazoleacetic acid, the oxidatively deaminated metabolite of tele-methylhistamine. The reaction was inhibited by low concentrations of (-)deprenyl, the specific MAO-B inhibitor. Tele-methylhistamine was also found to inhibit competitively the oxidation of phenylethylamine, but not

that of 5-hydroxytryptamine, providing further evidence that it is oxidized by MAO-B itself and not a related enzyme. This finding implies that (-)deprenyl and other MAO inhibitors used clinically may interfere with histamine metabolism. 22 references. (Author abstract modified)

002231 Escuret, E.; Roquefeuil, B.; La Paglia, M. A.; Chapron, C.; Baldy-Moulinier, M. no address **/Hemodynamic and cerebral metabolic study of diazepam in neurosurgical resuscitation./** Etude hemodynamique et metabolique cerebrale du diazepam en reanimation neurochirurgicale. Neuro-Chirurgie. 25:47-51, 1979.

The effect of diazepam on cerebral blood flow (CBF) and cerebral metabolism was analyzed in 12 neurosurgical patients. After a 0.64mg/kg injection inducing fast spindles and burst suppression in the EEG, the CBF showed a 29% reduction and the O2 consumption a 15% reduction. Study of the ratio CBF/CMRO showed the importance of the blood depression in relation to the metabolic depression, which is most likely due to a cerebral arteriolo capillary vasoconstriction as shown in the study of cerebral vascular resistances. These effects could be used in cases of cerebral hyperaemia. (Journal abstract modified)

002232 Evans, Larry E. J.; Bett, J. H. Nick; Cox, John R.; Dubois, Jean P.; Van Hees, Thea. Moreton House, 910 Stanley St., East Brisbane, Queensland 4169, Australia **The bioavailability of oral and parenteral clomipramine (anafranil).** Progress in Neuro-Psychopharmacology. 4(3):293-302, 1980.

The bioavailability of oral and parenteral clomipramine (anafranil) was assessed in 10 healthy volunteers administered 50mg of clomipramine orally and intravenously with at least 3 weeks between administrations. Regular estimations of serum clomipramine and the metabolite desipramine were undertaken during the 96 hrs following intravenous administration of clomipramine. The bioavailability of clomipramine was in the order of 50% with a half-life of about 20 hrs. 22 references. (Author abstract modified)

002233 Garrick, Nancy A.; Murphy, Dennis L. NIH Clinical Center, 10-3D41, Bethesda, MD 20205 **Species differences in the deamination of dopamine and other substrates for monoamine oxidase in brain.** Psychopharmacology. 72(1):27-33, 1980.

Cortex and caudate specimens from human, nonhuman primate, and rodent brains were examined for their ability to deaminate dopamine and for their sensitivity to irreversible monoamine oxidase (MAO) inhibitors. Using inhibition curves obtained with clorgyline, deprenyl, and pargyline to estimate the relative proportions of MAO type-A and MAO type-B activity, dopamine was found to be deaminated predominantly by MAO type-A in rat cortex and caudate. In contrast, dopamine was primarily an MAO type-B substrate in human and vervet cortex and caudate. Species differences in the proportion of brain MAO type-A and type-B activities and in the deamination of dopamine and other substrates for MAO may have important implications in regard to the widespread use of rodent rather than primate models in the study of biogenic amine metabolism and of drugs affecting amine function. 33 references. (Author abstract modified)

002234 Gilhus, Nils Erik; Strandjord, Roald E.; Aarli, Johan A. Dept. of Neurology, University of Bergen, N-5016 Haukeland sykehus, Bergen, Norway **Salivary immunoglobulin concentrations in patients with epilepsy treated with carbamazepine.** Acta Neurologica Scandinavica. 62(5):300-304, 1980.

The concentrations of IgA, IgG, and IgM in unstimulated saliva were determined by single radial immunodiffusion in 34 patients with partial epilepsy being treated with carbamazepine alone. Median salivary IgA concentration in the patients was significantly greater than in 41 healthy control Ss. Salivary IgG and IgM concentrations were also somewhat higher in the patients than in the control Ss, while the albumin concentrations were similar in the two groups. However, the differences in the immunoglobulin concentrations between patients and control Ss were not significant. No significant correlation between concentrations IgA in saliva and serum was found. 14 references. (Author abstract modified)

002235 Goldberg, Mark A.; Gal, Joseph; Cho, Arthur K.; Jenden, Donald J. Dept. of Neurology, Harbor General Hospital Campus, UCLA School of Medicine, 1000 W. Carson St., Torrance, CA 90509 **Metabolism of dimethoxymethyl phenobarbital (eterobarb) in patients with epilepsy.** Annals of Neurology. 5(2):121-126, 1979.

The metabolism of dimethoxymethyl phenobarbital (DMMP) was investigated in six epileptic patients using deuterium-labeled drug measured by integrated gas chromatography/mass spectrometry. Following an oral dose of 120mg, none of the parent compound appeared in serum, urine, or saliva in spite of a measurement sensitivity of less than 0.05nM/ml. A metabolite, monomethoxymethyl phenobarbital (MMP), was detected in all patients, with peak serum concentrations averaging 1.96nM/ml at 1.3 h. Phenobarbital was the major metabolite detected, and it reached peak levels in 6 to 12 hr. Two of the patients were continued on DMMP therapy for several months and then administered a pulse dose of deuterated drug. Again no DMMP was detectable. Steady-state drug administration had no effect on the kinetics of metabolism of either MMP or phenobarbital although peak serum concentrations were lower for both metabolites. In the urine of five patients an unidentified labeled fragment was detected that does not appear in urine from patients taking phenobarbital. From these pharmacokinetic studies it appears likely that the anticonvulsant activity of DMMP results from its metabolic conversion to phenobarbital. 17 references. (Author abstract modified)

002236 Goodale, David B.; Rusterholz, David B.; Long, John P.; Flynn, Jan R.; Walsh, Brian; Cannon, Joseph G.; Lee, Teresa. Dept. of Pharmacology, College of Pharmacy, University of Iowa, Iowa City, IA 52242 **Neurochemical and behavioral evidence for a selective presynaptic dopamine receptor agonist.** Science. 210(4474):1141-1143, 1980.

A new dopamine analog, 6,7-dihydroxy-dimethylaminotetralin (TL-99), was compared to apomorphine in three tests of dopaminergic function in the CNS. The tests, performed on rats, included production of changes in locomotor activity (involving both presynaptic and postsynaptic receptors), inhibition of dopa accumulation (quantifying presynaptic receptor activity) and the rotation model (quantifying postsynaptic receptor activation). Apomorphine was efficacious at both presynaptic and postsynaptic receptors, whereas TL-99 was much more efficacious at the postsynaptic receptor. This result indicates not only that differences exist between presynaptic and postsynaptic dopamine receptors, but also that these differences may be exploited in the design of selective dopamine agonists. 21 references. (Author abstract modified)

002237 Grove, J.; Tell, G.; Schechter, P. J.; Koch-Weser, J.; Warter, J. M.; Marescaux, C.; Rumbach, L. Centre de Recherche Merrell International, F-67084 Strasbourg, France **Increased CSF gamma-aminobutyric acid after treatment with gamma-vinyl GABA.** Lancet. No. 8195:647, 1980.

In order to determine if the administration of GABA transaminase (GABA-T) inhibitor would lead to dose related increases in cerebospinal fluid (CSF) GABA concentrations reflecting similar changes in brain GABA, gamma-vinyl (GABA) was ad-

ministered orally to 10 patients. Before teatment and within 24 hours after the last dose, samples of CSF were obtained by lumbar puncture and frozen immediately. The results indicate that CSF GABA concentrations were always increased by treatment. The mean increase was dose related. These results suggest that oral administration of gamma-vinyl GABA does increase GABA concentrations in the human brain and could achieve any therapeutic benefits associated with such an increase. 12 references.

002238 Halbreich, Uriel; Sachar, Edward J.; Nathan, R. Swami; Asnis, Gregory M.; Halpern, Frieda S. Dept. of Psychiatry, Montefiore Hospital and Medical Center, 111 East 210th St., Bronx, NY 10467 **The effect of benztropine mesylate on the prolactin response to haloperidol.** Psychopharmacology. 72(1):61-65, 1980.

The interaction between cholinergic and dopaminergic systems in regulating prolactin responses was investigated in normal men by administration of haloperidol, with and without benztropine. The acute prolactin response (at 30, 45, and 60 min) to haloperidol plus benztropine was significantly delayed compared to the response to haloperidol alone, in the same Ss. However, between 90 and 120 min after drug adminstration, prolactin responses achieved were similar in the tuberoinfundibular system, apparent at low doses of neuroleptic and high doses of anticholinergic drugs. 34 references. (Author abstract)

002239 Herrmann, W. M.; Itil, T. M. Department of Clinical Neuropsychopharmacology, Schering AG Berlin/Bergkamen, West Germany **Effects of single oral dosages of steroids on human EEG baseline crossing T-scores shown by multivariate statistics and standard profiles.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1317-1328).

The effects of seven steroid hormones (estrogen, androgen, antiandrogen, a progestogen, and three glucocorticosteroids) on human EEG were examined using the baseline crossing technique for parametrization. Multivariate statistics and standard computerized EEG (CEEG) profiles indicate that, among the endocrine active compounds, the androgen mesterolone, the antiandrogen cyproterone acetate, the progestogen D-norgestrel, and the estrogen estradiol valerate produce systematic effects, and the psychotropic properties of these compounds were predicted. Clinical trials supported psychotropic effects for mesterolone. Among the endocrine inactive compounds, the enantiomer of D-norgestrel showed systematic EEG changes similar to those of the active compounds, while the two stereoisomers of mesterolone did not show systematic EEG effects. The tested steroids may be the basis for development of specifically psychotropic steriods. 32 references. (Author abstract modified)

002240 Hopf, A.; Dross, K. Institut fur Hirnforschung der Universitat Dusseldorf, Dusseldorf, West Germany **Comparative studies on the metabolism and the distribution of sulpiride and sultopride.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1020-1024).

The pharmacokinetic phase of sulpiride and sultopride, two benzamide derivatives, was compared to determine if differences in metabolism and distribution could explain the different effects of the two drugs and the most important consequence of the molecular manipulation that is involved. The results suggest that: 1) since the drugs are similar in essential chemical structure, the same mechanism of interaction with the same receptors is probable; 2) differences in experimental and clinical effects are caused mainly by their different capacity to permeate membranes, especially the blood-brain barrier; and 3) this different capacity is mainly caused by their different lipid solubility.

002241 Horne, J. A.; Percival, J. E.; Traynor, J. R. Dept. of Human Sciences, Loughborough University, Loughborough, Leicestershire LE11 3TU, England **Aspirin and human sleep.** Electroencephalography and Clinical Neurophysiology. 49(3-4):409-413, 1980.

The effects of aspirin (acetylsalicylic acid) and aspirin derivatives upon human sleep EEGs were investigated. Two groups of eight females were given either three doses of 600mg aspirin or placebo daily for 4 days, double-blind. With aspirin, slow-wave sleep was significantly decreased and stage-2 sleep significantly increased. Aspirin also significantly disrupted intrasubject night to night continuity of several sleep stages during drug and recovery nights. 12 references. (Author abstract modified)

002242 Hunt, W. A.; Goldman, M. E. College of Pharmacy, University of Texas, Austin, TX 78712 **Lithium antagonism of ethanol-induced depletion of cerebellar guanosine-3',5'-cyclic monophosphate and stimulation of striatal dopamine release.** Journal of Studies on Alcohol. 40:401-407, 1979.

Long-term lithium treatment antagonized the behavioral intoxication, depletion of cerebellar guanosine-3',5'-cyclic monophosphate and stimulation of striatal dopamine release induced by a single dose of ethanol. Blood ethanol concentrations were significantly reduced after lithium treatment in a dose dependent manner. (Journal abstract modified)

002243 Jamnicky, Blanka; Muck-Seler, Dorotea; Deanovic, Zivan. Research Institute Yugoslavia **Effect of doxepin on serotonin metabolism in rat brain and serotonin uptake by human blood platelets.** Progress in Neuro-Psychopharmacology. 4(3):253-260, 1980.

The effects of doxepin, an antidepressant with tertiary amine group, on serotonin metabolism in rat brain and serotonin uptake by human blood platelets were investigated. Doxepin produced a marked increase in the concentration of rat brain tryptophan and slight, but statistically significant elevation in serotonin (5-HT) concentration. Two hours after the doxepin injection, no change in the steady-state level of brain 5-hydroxyindoleacetic acid (5-HIAA) was observed. However, in rats treated with pargyline, an inhibitor of monoamine oxidase (MAO), doxepin retarded 5-HIAA decline. Moreover, in rats receiving probenecid, a drug that blocks elimination of acidic metabolites from CNS, doxepin decelerated the rate of 5-HIAA accumulation. In vitro doxepin inhibited the uptake of 5-HT into human blood platelets. These data indicate that doxepin exerts its effect on brain serotoninergic neurons by the same or similar mechanisms as the other tricyclic antidepressants with tertiary amine inside chain, i.e., by inhibition of 5-HT reuptake mechanism. 31 references. (Author abstract modified)

002244 Jefferson, James W.; Greist, John H. no address **Lithium and the kidney.** In: Davis, J., Psychopharmacology update: new and neglected areas. New York, Grune and Stratton, 1979. (p. 81-104).

The clinical and research literature concerning the relationship of lithium (a nonmetabolized drug) and lithium chloride to the kidney is reviewed. Topics discussed include: lithium transport in the kidney; renal excretion of lithium; age and lithium excretion; serum lithium level and lithium excretion; affective state and lithium excretion; renal disease and lithium excretion; electrolytes and lithium excretion; diuretics and lithium excretion; parathyroid hormone and lithium excretion; renal tissue levels of lithium; renin; lithium-induced structural renal damage; polyuria, polydipsia, and diabetes insipidus; the syndrome of in-

appropriate antidiuretic hormone secretion; urinary acidification and renal tubular acidosis; and the use of lithium in the presence of impaired renal function. 125 references.

002245 Jeste, Dilip V.; DeLisi, Lynn; Zalcman, Steven; Wagner, Richard; Wyatt, Richard Jed. Laboratory of Clinical Psychopharmacology, NIMH, Saint Elizabeths Hospital, Washington, DC 20032 **Tardive dyskinesia: biochemical studies. (Unpublished paper).** Washington, DC, NIMH, 1980. 2 p.

Some significant biochemical differences between tardive dyskinesia (TD) patients and non-TD patients are reported. All 95 patients on five of the wards of Saint Elizabeths Hospital were screened. There were no significant differences between TD and non-TD patients in abnormalities on CAT scans. Among subjects presently on the same types of neuroleptics, TD patients were found to be receiving smaller daily doses than non-TD patients; yet serum/neuroleptic levels were significantly higher in the TD group than in matched controls. The TD patients had significantly higher plasma DBH activity and significantly lower platelet and lymphocyte MAO activities than controls matched for age, sex, primary psychiatric diagnosis, and length of neuroleptic treatment. The findings suggest possible differences between certain TD and non-TD patients in peripheral metabolism of neuroleptics and in central dopaminergic and adrenergic activities. Such differences, if confirmed even in subgroups of TD patients, may have clinical implications for TD management. 2 references.

002246 Jung, L. Fac. de Pharmacie de Strasbourg, Universite Louis Pasteur, F-67083 Strasbourg Cedex, France **/Orthomethoxy-benzamides: relationships between structure and activity, and pharmacokinetics of these drugs./** Orthomethoxy-benzamides: relations structure/activite et pharmacocinetique. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1015-1019).

The chemical structure and therapeutic activity of orthomethoxybenzamides (OMB) are examined. All members of the OMB group form a homogenous family with regard to their chemical structure. The metabolic transformation which favors interaction with the receptor does not favor elimination of the drug, as demonstrated in various studies on animals and humans. Tiapride, however, possesses the metabolic constants which combine interaction and elimination satisfactorily. 11 references.

002247 Kamoun, A. Institut de Recherche Servier, Developpement Clinique, 22, rue Garnier, F-92201 Neuilly/S/Seine, France **/Clinical pharmacology./** La pharmacologie clinique. Psychologie Medicale. 11(A):59-63, 1979.

Results of experiments on phase 1 of the development of amineptine (Survector) are reported. Studies of its mechanism of action after administration of a single dose, clinical testing, EEG and ophthalmological reactions and the safety of the drug with respect to cortical structures after single or repeated doses are reported. One case of amineptine overdose was observed. Survector was found to stimulate the cortical and subcortical structures without disturbing effect; its action upon the reticular formation of the medulla and the pons produces greater general alertness; 200mg of the Survector, given in two 100mg doses to a healthy subject at 8 and 12 o'clock did not affect the duration or quality of sleep. The drug was found to be safe ophthalmologically and to be without danger even in cases of accidental overdosage. (Journal abstract modified)

002248 Khoo, K.-C.; Mendels, J.; Rothbart, M.; Garland, W. A.; Colburn, W. A.; Min, B. H.; Lucek, R.; Carbone, J. J.; Boxenbaum, H. G. Dept. of Pharmacokinetics and Biopharmaceutics, Hoffman-La Roche Inc., Kingsland St., Nutley, NJ 07110 **Influence of phenytoin and phenobarbital on the disposition of a single oral dose of clonazepam.** Clinical Pharmacology and Therapeutics. 28(3):368-375, 1980.

Clonazepam (CZP) was measured in the plasma of eight subjects for 48 hours after a 0.03mg/kg oral dose and again after 19 day pretreatment with phenytoin (DPH, 4.3mg/kg/day) or phenobarbital (PB, 1.4mg/kg/day). DPH pretreatment lowered mean plasma CZP concentration at 8 of the 12 time points, increased CZP clearance by 46 to 58%, and decreased CZP half-life by 31%. PB pretreatment lowered mean plasma CZP concentration by an average of 11%, but the decrease was significant at only 1 of the 12 points; PB decreased mean CZP half-life by 11% and increased CZP clearance by 19 to 24%. DPH and PB both increased CZP clearances and decreased the areas under the plasma concentration/time curves without altering the volumes of distribution. Neither pretreatment significantly altered the extent of CZP protein binding. 25 references. (Author abstract modified)

002249 Klotz, U.; Reimann, I. Dr. Margarete Fischer-Bosch-Institut, fur Klinische Pharmakologie, Auerbachstrasse 112, D-7000 Stuttgart 50, West Germany **Influence of cimetidine on the pharmacokinetics of desmethyldiazepam and oxazepam.** European Journal of Clinical Pharmacology. 18(6):517-520, 1980.

The pharmacokinetics of single oral doses of desmethyldiazepam 20mg or oxazepam 50mg were studied in five healthy volunteers under controlled conditions, before and following a 24-hr pretreatment with cimetidine. Cimetidine significantly impaired the elimination of desmethyldiazepam, as shown by prolongation of its elimination half-life and decreased total plasma clearance. The disposition of oxazepam was not affected. It is concluded that cimetidine impairs the hepatic elimination of those benzodiazepines which are metabolized by phase I reactions. 18 references. (Author abstract modified)

002250 Kopin, Irwin J.; Goldstein, David S.; Feuerstein, Giora Z. Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **The sympathetic nervous system and hypertension: a position paper. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 16 p.

Data from comparative studies of plasma norepinephrine in patients with essential hypertension and in normotensive controls, which have reported higher mean levels in the hypertensive group, are analyzed and three factors which differentiate the positive from negative studies are discussed. The three factors are: 1) normotensive norepinephrine levels were significantly lower and less variable in positive studies; 2) positive studies were associated with no significant age/plasma norepinephrine correlation whereas negative studies showed this correlation; and 3) in positive studies the magnitude of the differences between hypertensive and normotensive subjects varied inversely with the ages of the study population. It is suggested that animal models may provide insights into the pathogenesis of hypertension. 45 references. (Author abstract modified)

002251 Kragh-Sorensen, Per; Larsen, Niels-Erik. Dept. of Psychiatry, Odense University Hospital, DK-5000 Odense C, Denmark **Factors influencing nortriptyline steady-state kinetics: plasma and saliva levels.** Clinical Pharmacology and Therapeutics. 28(6):796-803, 1980.

Steady-state plasma levels of nortriptyline (NT) were proportional to dose during initial and long-term treatment with NT. A significant age variation in NT plasma levels was found: patients over 70 years of age had higher levels than younger patients. During acute episodes of acute inflammatory disease, NT steady-state plasma levels rose after a change in sedimentation rate. The ratio of NT in saliva to that in plasma varied intraindividually and interindividually, and saliva levels were not as

stable as plasma levels. 26 references. (Author abstract modified).

002252 Krikorian, A. Institut de Recherche Servier, 22, rue Garnier, F-92201 Neuilly/S/Seine, France **/Toxicology -- pharmacology -- metabolism./** Toxicologie -- pharmacologie -- metabolisme. Psychologie Medicale. 11(A):51-57, 1979.

Toxicology studies of amineptine carried out in rats and mice and pharmacokinetic and metabolism studies of this drug performed on humans, dogs and rats were reported. The studies of acute and chronic toxicity and of the teratogenic effects have shown that amineptine is nontoxic. The results of the pharmacokinetic studies show that the drug is rapidly absorbed. Elimination is biexponential and occurs mainly in urine (75%). Fifteen minutes after administration, a large amount of the drug was found in the caudate nucleus and a smaller quantity was located in the thalamus and in the mesencephalon. Most of amineptine is excreted in 24 hours. (Journal abstract modified)

002253 Lal, S.; Young, S. N.; Cervantes, P.; Guyda, H. Dept. of Psychiatry, Montreal General Hospital, 1650 Cedar Ave., Montreal P.Q., Canada H3G 1A4 **Effect of L-tryptophan on apomorphine-induced growth hormone secretion in normal subjects.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(6):331-335, 1980.

Oral administration of the serotonin precursor, L-tryptophan, was studied in seven normal male volunteers at a 3g dosage sufficient to increase free plasma tryptophan concentrations more than 12 fold. The dosage had no significant effect on basal growth hormone secretion or on apomorphine HCl-induced (0.75mg sc) peak growth hormone concentrations. These data suggest that, in man, tryptophan administration has little effect on central dopaminergic function, at least in the hypothalamic/pituitary axis, and that serotonergic mechanisms have no major modulatory effect on dopamine mediated growth hormone secretion. 40 references. (Journal abstract modified)

002254 Langer, S. Z.; Briley, M. S.; Raisman, Rita; Henry, J. -F.; Morselli, P. L. Dept. of Biology, Synthelabo L.E.R.S., 58, rue de la Glaciere, F-75013 Paris, France **Specific 3H-imipramine binding in human platelets: influence of age and sex.** Naunyn-Schmiedeberg's Archives of Pharmacology. 313(3):189-194, 1980.

The influence of age and sex on specific 3H-imipramine binding in human platelets was investigated. Human platelets have been shown to possess high affinity binding sites for 3H-imipramine. These binding sites have a similar affinity and drug specificity to those already described in rat brain. The platelets from healthy volunteers show no difference in 3H-imipramine binding between the sexes, but there is a decrease in maximal 3H-imipramine binding with increasing age of the donor. It is noted that 3H-imipramine binding represents a potential tool not only in fundamental research into affective disorders but also in the assessment and comparison of new antidepressive drugs. 30 references. (Author abstract modified)

002255 Lawton, N. F.; MacDermot, J. Wessex Neurological Centre, Southampton University Hospitals, Southampton S09 4XY, England **Abnormal regulation of prolactin release in idiopathic Parkinson's disease.** Journal of Neurology, Neurosurgery, and Psychiatry. 43(11):1012-1015, 1980.

The effect of pretreatment with levodopa on the stimulated release of prolactin by thyrotrophin releasing hormone (TRH) in Parkinsonian patients and normal Ss was examined. Levodopa with carbidopa suppressed prolactin release induced by TRH less effectively in patients with idiopathic Parkinson's disease than in normal Ss. This finding supports the view that the biochemical defect in idiopathic Parkinson's disease extends to the hypothalamus and is not confined to the basal ganglia. Etiological considerations in Parkinson's disease should encompass a widespread disorder of neurotransmission whose extent merits further investigation. 16 references. (Author abstract modified)

002256 Le Fur, G. Pharmuka, 35, quai du Moulin-de-Cage, F-92231 Gennevilliers, France **/On the proposed mechanism of action of antidepressants./** A propos du mecanisme d'action suppose des antidepresseurs. Encephale. 6(4):303-313, 1980.

Action mechanisms of classical antidepressants are discussed. These antidepressants increase monoamine levels in the synaptic cleft. The antidepressants also possess a presynaptic and postsynaptic mechanism. Side-effects have been correlated with a blockade of postsynaptic receptors: orthostatic hypotension, sedation, and anticholinergic effects. These effects do not explain the delay in clinical efficiency of antidepressants. A pharmacokinetic explanation for the delay of clinical efficiency, i.e., the necessary delay to reach brain steady-state level, is possible. Work concerning the presence of imipramine binding sites might create a new approach to investigating the mechanism of action of antidepressants. 19 references. (Journal abstract modified)

002257 Lemberger, Louis; Crabtree, Ross; Callaghan, J. Thomas. Lilly Laboratory for Clinical Research, Wishard Memorial Hospital, Indianapolis, IN 46202 **Pergolide, a potent long-acting dopamine-receptor agonist.** Clinical Pharmacology and Therapeutics. 27(5):642-651, 1980.

A single oral dose of pergolide (100 to 400mcg) reduced basal plasma prolactin levels in normal Ss. This dose-related effect persisted for more than 24 hours. Multiple doses of pergolide (150 to 250mcg daily for 7 days) decreased plasma prolactin by more than 80%. A single 150mcg dose of pergolide suppressed plasma prolactin and abolished the plasma prolactin diurnal rhythm. Pergolide also inhibited the plasma prolactin elevation induced by perphenazine, but had no effect on plasma follicle stimulating hormone, luteinizing hormone, cortisol, growth hormone, or thyroid stimulating hormone. Results indicate that pergolide acts specifically on pituitary dopamine receptors that mediate prolactin secretion. 31 references. (Author abstract modified)

002258 Linnoila, Markku; Seppala, Timo; Mattila, Mauri J.; Vihko, Reijo; Pakarinen, Arto; Skinner, J. Travis, III. Box 2921, Duke University Medical Center, Durham, NC 27710 **Clomipramine and doxepin in depressive neurosis: plasma levels and therapeutic response.** Archives of General Psychiatry. 37(11):1295-1299, 1980.

The therapeutic efficacy, plasma levels, and psychomotor effects of tryptophan (L-tryptophan) in neurotically-depressed outpatients was investigated. The tricyclic antidepressants were significantly more efficacious than tryptophan in inducing remission. The alleviation of depression was preceded by an improvement on the initial slow information processing rates in the depressed Ss. The plasma levels of the tricyclics that were associated with a therapeutic response were significantly lower than those reported in endogenously-depressed inpatients. 38 references. (Author abstract modified)

002259 Loosen, Peter T.; Wilson, Ian C.; Prange, Arthur J., Jr. Clinical Research Unit, Dorothea Dix Hospital, Raleigh, NC 27611 **Endocrine and behavioral changes in depression after thyrotropin-releasing hormone (TRH): alteration by pretreatment with thyroid hormones.** Journal of Affective Disorders. 2(4):267-278, 1980.

The effects of pretreatment with a single dose of thyroid hormones (TH) on the subsequent endocrine and behavioral response to thyrotropin releasing hormone (TRH) was evaluated in unipolar depressed women. TH pretreatment altered neither serum levels of thyroid hormones nor the TRH-induced thyroid stimulating hormone response. It antagonized, however, the behavioral response to TRH. This was apparent in two self-assessment scales but not in an objective rating scale. Taken together the data suggest that there is an impaired pituitary response to TH feedback in depressed patients, and that TH pretreatment may affect self-assessment of behavioral effects of TRH in depression. 46 references. (Author abstract)

002260 Luoma, P. V.; Myllyla, V. V.; Sotaniemi, E. A.; Hokkanen, T. E. J. Dept. of Internal Medicine, University of Oulu, SF-90220 Oulu 22, Finland **Plasma HDL cholesterol and growth hormone in epileptics treated with anticonvulsants.** Acta Pharmacologica et Toxicologica. 47(4):249-251, 1980.

Plasma high density lipoprotein (HDL) cholesterol and serum growth hormone (GH) levels were elevated during anticonvulsant treatment of 166 epileptic patients, compared to 54 healthy controls. Of 31 patients with elevated GH, 19 also had elevated plasma HDL cholestrol. The increase in GH secretion in epileptics may be associated with an increase in hepatic production of HDL. 13 references. (Author abstract modified)

002261 Magnussen, I.; Nielsen-Kudsk, F. University Dept. of Neurology, Aarhus Kommunehospital, University of Aarhus, DK-8000 Aarhus C, Denmark **Bioavailability and related pharmacokinetics in man of orally administered L-5-hydroxytryptophan in steady state.** Acta Pharmacologica et Toxicologica. 46(4):257-262, 1980.

The bioavailability of L-5-hydroxytryptophan (5-HTP) in steady-state was studied after coadministration with an L-aromatic decarboxylase inhibitor to five patients with myoclonic disorders. The direct proportionality between the size of the 5-HTP dose and the corresponding areas under the plasma concentration curves within each interval at steady-state indicated the compound has dose dose-independent, linear pharmacokinetics. Systemic availability of 5-HTP had an interindividual range of 47 to 84%, with a mean of 69.2%. Absorption was slow, with 1.8 to 3.3 hours elapsing between times of administration and maximum measured plasma concentrations. 9 references. (Author abstract modified)

002262 Malen, C. E. Recherche Chimie de Synthese I.N.R.S., 3 rue de la Republique, F-92150 Suresnes, France **/Chemical structure of survector. Structure activity relationship./** Structure chimique du Survector. Relation structure-activite. Psychologie Medicale. 11(A):25-28, 1979.

Amineptine, its chemical structure, and structure activity relationship, is discussed. Amineptine, a molecule derived from a tricyclic dibenzosuberan nucleus, has a long amino acid chain with seven carbon atoms, attached to the middle ring. This substitution is quite unusual in the group of antidepressants and probably causes a different metabolism and mechanism of action. The rationale and the stages in the study of structure activity relationships are described. (Journal abstract modified)

002263 Meinck, H.-M.; Mohlenhof, O.; Kettler, D. Physiologisches Institut II, Universitat Gottingen, D-3400 Gottingen, West Germany **Neurophysiological effects of etomidate, a new short-acting hypnotic.** Electroencephalography and Clinical Neurophysiology. 50(5-6):515-522, 1980.

The neurophysiological effects of 0.3mg/kg etomidate injected i.v. within 30 sec were investigated in 22 healthy volunteers, seven of whom were premedicated with Thalamonal and fentanyl. About 30 sec after injection, a short period of delta activity (deep sleep) occurred in the EEG, successively normalizing within the next 6 to 8 min. EEG arousal reactions to various stimuli were blocked for several minutes. In the premedicated group neither motor hyperactivity nor monosynaptic reflex alterations were observed. In contrast, nine out of 15 nonpremedicated Ss exhibited various kinds of motor hyperactivity, consisting most often of asynchronous clonic bursts of activity in the electromyogram (EMG). Clonus was not related to EEG events, and could persist beyond behavioral and EEG recovery. In 12 Ss, the monosynaptic H-reflex was enhanced up to six fold. The plantar reflex was reinforced to a generalized withdrawal reaction, sometimes a positive Babinski sign was observed. It is assumed that clonus is generated in spinal circuits, whereas supraspinal structures may contribute to the more complex forms of motor hyperactivity. 19 references. (Author abstract)

002264 Meltzer, Herbert Y. Dept. of Psychiatry, University of Chicago Pritzker School of Medicine, Chicago, IL 60612 **Clinical evidence for multiple dopamine receptors in man.** Communications in Psychopharmacology. 3(6):457-470, 1979.

Clinical evidence for the existence of multiple dopamine (DA) receptors is reviewed. Most clinical studies indicate that DA receptors in the striatal, limbic, and cortical DA systems have similar responses to neuroleptics, but some drugs (such as sulpiride and clozapine) appear to have selective effects. Studies of the effects of apomorphine, piribedil, and bromocriptine in normal controls and patients with psychoses, tardive dyskinesia, Parkinson's disease, or Huntington's chorea suggest the existence of presynaptic DA autoreceptors on striatal, limbic, or cortical neurons. Postmortem studies of (3H)-spiroperidol binding suggest there are different DA receptors in human cortex and caudate. 83 references. (Author abstract modified)

002265 Meltzer, Herbert Y. Dept. of Psychiatry, University of Chicago, 950 E. 59th St., Chicago, IL 60637 **Effect of psychotropic drugs on neuroendocrine function.** Psychiatric Clinics of North America. 3(2):277-298, 1980.

Research on the effects of the major psychotropic drugs on the secretion of pituitary hormones and hormones of the target glands is reviewed. Topics include dopamine receptor blocking drugs, reserpine, alpha-methylparatyrosine (AMPT), tricyclic antidepressants, lithium carbonate, and dopamine agonists on the secretion of hormones from the pituitary, adrenal, thyroid, and gonads. The usefulness of these studies in understanding the mechanism of action of psychotropic/neuroleptic drugs, possible neurotransmitter abnormalities in psychiatric patients, prediction of clinical response to these agents, and basic aspects of neurotransmitter physiology are highlighted. The major interest in these neuroendocrine studies is the ability of psychotropic drugs to modify hormone secretion, especially prolactin and growth hormones. 99 references. (Journal abstract modified)

002266 Montgomery, S. A.; McAuley, R.; Rani, S. J.; Roy, D.; Montgomery, D. B.; Dawling, S.; Braithwaite, R. A. Psychiatric Research Unit, Preston Hall Hospital, London, England **High levels of amitriptyline and clinical response.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 980-984).

Evidence of a highly significant improved clinical outcome on the Hamilton Rating Scale (HRS) is reported as seen in patients developing plasma concentrations of amitriptyline plus nortriptyline in the range between 80 and 200 mg/1 compared with those above and below this range at 4 weeks and 6 weeks. The upper end of this range is not sharp and levels above 300 mg/1 are associated with a poorer response. A highly significant

negative correlation is seen between nortriptyline plasma levels and therapeutic response as measured by HRS % change, with high levels associated with poorer outcome. Excluding low levelers, this correlation increases to r equals -0.55, while this is not significant for amitryptyline. No simple relationship exists between plasma levels of amitriptyline or nortriptyline and side effects, and patients with high levels cannot be identified clinically. Plasma levels of amitriptyline plus nortriptyline should be adjusted to within the range for optimum clinical response and to reduce possible cardiotoxic risks of high levels. 13 references. (Author abstract modified)

002267 Morselli, P. L; Zarifian, E.; Cuche, H.; Bianchetti, G.; Cotterau, M. J.; Deniker, P. Dept. of Clinical Research, SYNTHELABO, L.E.R.S., Paris, France **Haloperidol plasma level monitoring in psychiatric patients.** Advances in Biochemical Psychopharmacology. 24:529-536, 1980.

The relationship between haloperidol plasma levels in body fluids and its clinical and biochemical effects was investigated, and the utility of haloperidol plasma level monitoring in psychiatric patients was evaluated. Data on children (mostly newly treated patients) show clearly that threshold levels for undesirable side-effects exist for haloperidol. In both children and adults, no relationship was noticed between haloperidol plasma concentrations and the daily dose of the drug. It is concluded that monitoring haloperidol plasma concentration in psychotic patients undergoing chronic treatment is a useful tool for better clinical management and for understanding the basic mechanism underlying the pathological process. 20 references.

002268 Oh, V. M. S.; Ehsanullah, R. S. B.; Leighton, M.; Kirby, M. J. Ehsanullah: Dept. of Clinical Pharmacology, St. Bartholomew's Hospital, West Smithfield, London EC1A 7BE, England **Influence of ciclazindol on monoamine uptake and CNS function in normal subjects.** Psychopharmacology. 60(2):177-181, 1979.

The potential antidepressant drug ciclazindol was found to inhibit dopamine uptake into human platelets without affecting 5-hydroxytryptamine uptake as compared with a control S. It inhibited the tyramine pressor response less than desipramine after single 50mg oral doses in six healthy volunteers under double-blind conditions. Compared with tandamine in a double-blind, placebo-controlled study in nine healthy Ss, ciclazindol 50mg orally caused no significant anticholinergic effects but reduced appetite according to an analysis of variance. Nonparametric analysis did not confirm the anorectic effect. Overall, ciclazindol resembles the antiobesity drug mazindol in molecular structure and pharmacological effects in man. Interactions with sympathomimetic amines and adrenergic neuron blocking drugs cannot be excluded on the basis of these studies. 6 references. (Author abstract modified)

002269 Ostrow, David G.; Pandey, G. N.; Davis, John M. Dept. of Psychiatry, Michael Reese Hospital-Medical Center, Chicago, IL **Abnormalities of lithium transport in patients with affective disorders.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1153-1158).

The biomedical basis of alterations in lithium transport and the resulting changes in the lithium ratio (LR) were studied. Results of previous studies show the presence of at least four operationally distinct pathways of transport in the human red blood cell (RBC). The Li-Na counterflow system, which is sensitive to inhibition by phloretin, is the major determinant of the LR, and a genetically determined defect in that pathway appears responsible for the increased ratio observed in some manic-depressive patients. Additional studies were conducted on a patient in whom a soluble plasma factor was present which inhibited lithium afflux via the Li-Na counterflow system and which may be responsible for variations in the LR over the course of her affective cycles. The usefulness of measurements of lithium transport as predictors of the in vitro LR, response to lithium therapy, and for monitoring maintenance therapy are discussed. 4 references. (Author abstract modified)

002270 Patay, Max. Service medical CLIN-MIDY, 51, bd. de la Liberte, F-35010 Rennes Cedex, France **/History and pharmacology of minaprine./** Histoire et pharmacologie de la minaprine. Psychologie Medicale. 12(B):21-24, 1980.

The pharmacological effects of a new drug called minaprine (minaprine chlorohydrate), manufactured in France under the brand name of Cantor, are described. The chemical structure of minaprine makes it impossible to classify the new drug in any known category of psychotropic drugs. The main activities of minaprine include: glycinergic receptor blockade and procholinergic and serotoninergic actions. It was found that minaprine has an effect on cerebral electrogenesis (hyperexcitability of the cerebral cortex, of the striatum and of the caudal nucleus, with reduced excitability of the limbic system and of the mesencephalic reticulum), on the process of memorization (retention rather than learning), and on certain neuromediators (dopamine and serotonin). Current research shows that minaprine attaches itself to the CNS and especially to the gray matter. It also increases the cerebral rates of acetylcholine (particularly in the tonsils, the hypothalamus, the septum, and the raphe). It is concluded that minaprine harmonizes the excitation and inhibition of the nueronal systems. 4 references.

002271 Patay, Max; Scharbach, Hugues; Levron, Maurice. Service medical CLIN-MIDY, 51, bd. de la Liberte, F-35010 Rennes Cedex, France **/Glycine, acetylcholine, and serotonin: neurotransmitters or neuromodulators?/** Glycine, acetylcholine et serotonine: neuromediateurs or neuromodulateurs? Psychologie Medicale. 12(B):25-34, 1980.

The neurological and psychopharmacological effects of glycine, acetylcholine, and serotonin are described. Glycine controls the polarization of neurons; it is a neuromodulator. Serotonin modulates the activity of large cerebral structures and is a neurotransmitter. Acetylcholine affects both long and short neurons; playing the role of a neurotransmitter in long neurons, and acts as a modulator in short neurons. It is concluded that these drugs are simply plain chemical molecules. Their effects will depend only on the type of the receptor, on the neuron which carries them, and on the passage where the neuron is integrated. 6 references.

002272 Patwardhan, Rashmi V.; Desmond, Paul V.; Johnson, Raymond F.; Dunn, G. Dewey; Robertson, David H.; Hoyumpa, Anastacio M., Jr.; Schenker, Steven. Schenker: VA Medical Center, 1310 24th Ave. South, Nashville, TN 37203 **Effects of caffeine on plasma free fatty acids, urinary catecholamines, and drug binding.** Clinical Pharmacology and Therapeutics. 28(3):398-403, 1980.

Caffein (250mg orally) caused a rise in free fatty acids (FFA) but did not alter plasma binding of chlordiazepoxide, diazepam, or propranolol in 16 normal Ss. FFA doubled 1 hour after caffeine and remained elevated for at least 4 hours. Urinary excretion of epinephrine and dopamine increased in the first 2 hours and returned to baseline in the next 2 hours. In vitro addition of oleic acid to plasma samples caused a step-wise increase in percent unbound fraction of chlordiazepoxide, diazepam, and propranolol, but in vitro addition of caffeine did not further alter drug binding. 20 references. (Author abstract modified)

002273 Perez-Cruet, J.; Waite, John G.; Khajawall, A.; Mallya, A. Dept. of Psychiatry, University of Puerto Rico School of Medicine, San Juan, Puerto Rico **Possible role of the thymus gland in mental illness.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 726-729).

Evidence is presented that the thymus gland is affected in vivo by lithium, imipramine, and chlorpromazine, and that in humans, suppression of T-lymphocyte function by these drugs is significant. Suppression of E-rosette formation by lithium was corrected by thymosin, whereas suppression by imipramine, a tricyclic antidepressant, was not corrected. In rats, significant reduction in the weight of the thymus gland was observed after treatment with lithium, imipramine, and chlorpromazine. These effects of thymus weight were not corrected by zinc administration. Suppression of E-rosette formation in vitro by addition of lithium, impramine, or chlorpromazine to isolated T-lymphocytes showed a different response. Possible involvement of the thymus gland in mental illness is hypothesized. 2 references. (Author abstract modified)

002274 Perris, C.; von Knorring, L.; Kemali, D. no address **Clinical neurophysiological aspects of psychopathological conditions.** Advances in Biological Psychiatry. Volume 4. New York, S. Karger, 1980. 192 p.

Papers presented at the First International Symposium on Clinical Neurophysiological Aspects of Psychopathological Conditions, held in Umea, Sweden, May 30 to June 1, 1979, are presented. The papers cover the following areas: interhemispheric differences and psychopathology; neurophysiological and psychophysiological correlates of the experience of pain; characteristics in EEG/EP in relation to psychiatric diagnosis and genetic characteristics; and effects of psychotropic drugs on EEG/EP.

002275 Pert, Agu. Section on Biochemistry and Pharmacology, Biological Psychiatry Branch, NIMH, Bethesda, MD 20205 **Mechanisms of opiate analgesia and the role of endorphins in pain suppression. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 35 p.

The mechanisms of opiate analgesics in pain suppression are discussed, specifically: direct spinal actions of opiates; supraspinal sites of opiate analgesia; descending inhibitory mechanisms; the role of descending serotonergic pathways in morphine analgesia; and noradrenergic descending pathways and morphine analgesia. Also discussed are: the endogenous opioid pain suppression system; the question of whether naloxone induces hyperalgesia; and endorphins in pathological pain states. 182 references.

002276 Perucca, E.; Hebdige, S.; Frigo, G. M.; Gatti, G.; Lecchini, S.; Crema, A. Clinical Pharmacology Unit, National Hospital, Queen Square, London, WC1, England **Interaction between phenytoin and valproic acid: plasma protein binding and metabolic effects.** Clinical Pharmacology and Therapeutics. 28(6):779-789, 1980.

The effect of sodium valproate (400mg three times a day) on the disposition kinetics of phenytoin (250mg i.v.) was studied in seven normal Ss. After valproate, the free fraction of phenytoin in serum rose from 9.6 to 15.6% and systemic clearance and apparent volume of distribution of total drug increased. Free phenytoin concentration in serum and phenytoin concentration in saliva increased during valproate administration; clearance and apparent volume of distribution of free drug was reduced. A small increase in renal excretion of unchanged phenytoin was observed. Results suggest that valproic acid may displace phenytoin from plasma protein binding sites (enhancing systemic clearance of the drug) and inhibit phenytoin metabolism (increasing the concentration of free drug in serum). 43 references. (Author abstract modified)

002277 Poli, M.; Caviezel, F.; Girardi, A. M.; Bosi, E.; Pozza, G. Dept. of Medical Pathology, University of Milano, San Raffaele Hospital, Milano-Segrate, Italy **Inhibition of sulpiride-induced prolactin secretion by dihydroergocristine in man.** Advances in Biochemical Psychopharmacology. 24:445-449, 1980.

The effects of dihydroergocristine (DEC) on sulpiride-induced prolactin (PRL) secretion were studied in seven male volunteers. DEC clearly inhibited sulpiride-induced PRL secretion when given either intramuscularly or p.o. in man. PRL inhibition appears to be of greater duration after a bromurated derivative of the ergot than after DEC. DEC has a definite alphalytic activity on the vascular bed and on the pancreatic beta cell owing to the hydrogenation of its molecule in C9-10. It is suggested that the PRL-inhibiting effect of DEC is due to a dopaminergic mechanism. 24 references.

002278 Puech, A. J.; Lecrubier, Y.; Simon, P. Dept. de Pharmacologie, Fac. de Medecine Pitie-Salpetriere, 91, bld de l'Hopital, F-75634 Paris Cedex 13, France **/The role of norepinephrine in affective disorders./** Role de la noradrenaline dans les troubles de l'humeur. Encephale. 5(5, Suppl.):507-519, 1979.

The role of norepinephrine in affective disorders is discussed in relation to the activity of the noradrenergic system. In depressive patients a decrease of noradrenergic system activity was evaluated by a decrease of the metabolism of noradrenaline, a hyperreactivity of adrenergic receptors, and a decrease of the secretion of some hormones (melatonin, renin, and corticosteroids). It is suggested that the well recognized antidepressant drugs are able to activate the noradrenergic system by different mechanisms. Reciprocally, drugs well known to stimulate the noradrenergic system are able to increase mood, while, on the other hand, antimanic drugs are adrenolytic, and adrenolytic drugs are antimanic and depressogenic. 39 references. (Journal abstract modified)

002279 Queisnerova, M.; Dlabac, A.; Metysova, J.; Svatek, E.; Roubal, Z. Research Institute for Pharmacy and Biochemistry, Kourimska 17, 130 60 Prague 3, Czechoslovakia **Contribution to the pharmacokinetics and metabolism of oxyprothepine.** Activitas Nervosa Superior. 22(3):162-163, 1980.

Blood levels of oxyprothepine were studied in rats after administration of some newly-developed dispensing forms, and the metabolism of oxyprothepine in rats and humans is described. The following preparations were administered to male Wistar rats: oxyprothepine mesylate (OM) in aqueous medium, oxyprothepine base (OB) in miglyol, and oxyprothepine decanoate (OD) also in miglyol. No difference was found between the blood levels after administration of OM and OB; the OD values were relatively longer lasting. Studies directed to isolation and identification of highly polar-free metabolites and hydroxy derivatives, liberated from glucuronides present in the urine of patients after repeated administration of tablets containing oxyprothepine mesylate are noted. 5 references.

002280 Risch, Samuel C.; Cohen, Robert M.; Janowsky, David S.; Kalin, Ned H.; Murphy, Dennis L. Clinical Neuropharmacology Branch, NIMH, Bethesda, MD 20205 **Mood and behavioral effects of physostigmine on humans are accompanied by elevations in plasma beta-endorphin and cortisol.** Science. 209(4464):1545-1546, 1980.

Physostigmine was administered to normal volunteers in a random assignment, double-blind crossover study to evaluate whether the behavioral and psychological changes produced by

the drug are associated with observable biological changes. Physostigmine produced significant elevations in plasma cortisol and beta-endorphin immunoreactivity as well as alterations in mood, cognition, and behavior. These observations might be explained by a cholinergically-mediated stress syndrome. However, peak elevations in plasma beta-endorphin immunoreactivity, but not in plasma cortisol, were significantly correlated with physostigmine-induced increases in depression ratings. These results suggest that a cholinergically mediated beta-endorphin pathway may be involved in the observed affective changes. 21 references. (Author abstract modified)

002281 Rogozea, R.; Florea-Ciocoiu, Viorica; Balaita, Corina; Luca, Noemi. Institute of Neurology and Psychiatry, Academy of Medical Sciences, Bucharest, Romania **Interrelation at plasmatic level between antiepileptic drugs and lipids. Its implications in the efficiency of treatment in epilepsy. I. Changes induced by phenobarbital or/and diphenylhydantoin in serum lipids.** Neurologie et Psychiatrie. 18(2):69-77, 1980.

The effects of phenobarbital (PHB) and/or diphenylhydantoin (DPH) on serum lipids were studied in 121 epileptics and 30 normal controls. A significant increase of triglyceridemia and lipacidemia, alterations in the free/esterified cholesterol ratio and in the electrophoretic spectrum of lipoproteins were noted in the epileptic Ss. A relation was found between severity of changes in serum lipids and the drug used, time elapsed after initiation of medication, serum concentration, and daily dose administered. It was found that the alterations induced by PHB and/or DPH fail to affect the electroclinical efficiency of the antiepileptic treatment. 25 references. (Journal abstract modified)

002282 Rollins, Douglas E.; Alvan, Gunnar; Bertilsson, Leif; Gillette, James R.; Mellstrom, Britt; Sjoqvist, Folke; Traskman, Lil. Alvin: Dept. of Clinical Pharmacology, Huddinge University Hospital, S-141 86 Huddinge, Sweden **Interindividual differences in amitriptyline demethylation.** Clinical Pharmacology and Therapeutics. 28(1):121-129, 1980.

After amitriptyline (AT) and its demethyl metabolite nortriptyline (NT) were given orally and intramuscularly to six normal Ss, the mean unbound fractions of AT and NT in plasma were 5.4% and 8.3%, respectivly. The blood/plasma ratio of NT was nearly double that of AT, which was close to unity. The mean systemic availability of oral relative to intramuscular AT and NT was 43% and 61%. The demethylation of orally administered AT varied considerably with individuals (from 25% to 80%) and correlated with oral drug clearance. The estimated oral clearance of AT from demethylation ranged from 0.21 to 1.801/minute. 32 references. (Author abstract modified)

002283 Rosati, G.; De Bastiani, P.; Gilli, P.; Paolino, E. Clinica Neurologica dell'Universita, Corso Giovecca, 203, I-44100 Ferrara, Italy **Oral aluminum and neuropsychological functioning: a study of dialysis patients receiving aluminum hydroxide gels.** Journal of Neurology. 223(4):251-257, 1980.

Nine dialysis patients with significantly increased serum aluminum levels due to chronic ingestion of aluminum hydroxide gels and 11 dialysis patients with normal serum aluminum levels were tested neuropsychologically for generalized functions (intelligence, reasoning, memory) and for more specific abilities (visual memory, verbal and reading fluency, manual dexterity). No significant difference in neuropsychological functioning between the two groups was found. It is suggested that oral aluminum is not neurotoxic for man, even under circumstances of renal failure. This contradicts the idea that oral aluminum plays a role in the etiology of dialysis dementia. Some precautions regarding the use of oral aluminum are suggested. 33 references. (Author abstract modified)

002284 Rosser, R. M.; Braithwaite, R.; Dawling, S.; Lynn, K. Dept. of Psychiatry, Charing Cross Hospital, London, England **Anti-depressives in renal failure.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 985-990).

Three studies of the kinetics of tricyclic and tetracyclic antidepressant and their relation to depressive illness outcome are described. The Ss were patients in chronic renal failure, especially those in the end stage on dialysis. The outcome of depressive illness was disappointing in patients with very high and variable plasma concentrations. Variations in plasma protein binding may complicate interpretation of plasma levels. The results indicate that on modest doses of amitriptyline, high plasma concentrations of amitriptyline and nortriptyline are achieved; and there is a tendency for improvement to be greater in those in whom the concentration is more stable. Causes of failure to reach a steady state are not clear; poor compliance did not seem to be the explanation. 7 references. (Author abstract modified)

002285 Roth, Robert H.; Bacopoulos, Nicholas G.; Bustos, Gonzalo; Redmond, D. Eugene, Jr. Dept. of Pharmacology, Yale University School of Medicine, New Haven, CT 06510 **Antipsychotic drugs: differential effects on dopamine neurons in basal ganglia and mesocortex following chronic administration in human and nonhuman primates.** Advances in Biochemical Psychopharmacology. 24:513-520, 1980.

The differential effects of antipsychotic drugs on dopamine neurons in basal ganglia and mesocortex following chronic administration in human and nonhuman primates were investigated. Initial studies with the Vervet monkey demonstrate that a single injection of haloperiodol, fluphenazine, or chlorpromazine results in a significant increase in cerebrospinal fluid (CSF) homovanillic acid (HVA) levels and HVA levels in specific brain regions such as basal ganglia and cortex. These drugs also increased tyrosine hydroxylase activity in homogenates of both the caudate nucleus and putamen. In schizophrenic patients chronically treated with antipsychotic drugs, a significant increase in HVA is found in the cingulate and perifalciform cortex, but not in the putamen and nucleus accumbens, suggesting possible loci for the therapeutic action of these drugs and providing and first direct experimental evidence that antipsychotic drug treatment increases the metabolism of dopamine in human brain in a regionally specific manner. 17 references.

002286 Roubicek, Jiri; Krebs, Eva; Poeldinger, Walter. Hauptstrasse 34, CH-4102 Binningen/BL, Switzerland **Classification of endorphins/enkephalins in brain physiology and pathology (based on EEG and clinical study of synthetically-modified methionine-enkephalin).** Progress in Neuro-Psychopharmacology. 4(4/5):507-518, 1980.

The classification of endorphins/enkephalins in brain physiology and pathology based on EEG and clinical study of synthetically modified methionine-enkephalin (met-enk) is discussed. The synthetically modified met-enk, FK 33-824 induced a short-term improvement in the symptoms of five of seven psychotic patients. EEG investigation of this compound in 20 normal volunteers indicated typical changes in electrical activity (increased alpha and beta activity with a simultaneous decrease in slow-waves). The changes after FKK-33-824 differed from placebo changes and from the well known changes seen after opioid alkaloids. 8 references. (Author abstract modified)

002287 Rubin, Robert T. University of California at Los Angeles Medical Center, Torrance, CA 90509 **Antipsychotic drugs:**

measurement and endocrine effects. (Unpublished paper). Final Report, NIMH Grant R01-MH-29491, 1980. 8 p.

The prolactin release effect of antipsychotic drugs as an in vivo bioassay for these drugs in humans was studied, and a standardized predictive test for the clinical responsiveness to antipsychotic drugs in psychiatric patients, based on individual patients' prolactin responses to a challenge drug dose, was developed. Dose response curves for haloperidol (a dopamine blocking drug) were developed by fully characterizing the complete prolactin response profile in serum over time following administration of this drug by different parenteral routes. These profiles were compared with other indices of drug pharmacokinetics, particularly by direct measurement of haloperidol in serum using radioimmunoassay techniques. It is suggested that there may be individual differences in the pituitary dopamine receptors, as this is the site of action of haloperidol. 14 references.

002288 Sabater, J.; Oller, F. V.; Maya, A.; Lagunas, M. A.; Oller-Daurella, L. Instituto de Bioquimica Clinica, Servicio de Neurofisiologia del Hospital General de N.S. del Mar. Barcelona, Spain **Correlations between plasma levels of antiepileptic drugs and EEG intensive monitoring.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 963-968).

Intensive monitoring of the epileptic crisis was carried out over a period of 12 hr recording EEG every hour for a period of 15 min using a continuous connection to the EEG system, and correlations were made between plasma levels of orally administered antiepileptic drugs and EEG patterns. In four of six cases, the form of epilepsy was generalized or unilateral, and the crises disappeared in the 6 months following monitoring. Improved EEG patterns were also noted from the day of monitoring. During the day of intensive monitoring, when a therapeutic level in plasma was obtained during the progressive elevation of the serum levels, this coincided with the decrease or disappearance of the characteristic EEG graphoelement. In later weeks, this was accompanied by continuous improvement or normalization of the EEG. The two cases of partial epilepsy whose development was not favorable, showed an indirect correlation between the frequency of the crises and paroxysmal EEG irregularities, and only a transitory reduction in the number of EEG abnormalities was observed.

002289 Schacht, U.; Leven, M.; Gerhards, H. J. Hoechst Aktiengesellschaft, Pharma-Forschung, Postfach 80 03 20, D-6230 Frankfurt/Main 80, West Germany **Recent investigations on the mechanism of action of nomifensine.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1025-1029).

Evidence is presented of the mechanism of action of nomifensine, a monoamine uptake blocker resembling the tricyclic antidepressants. Results from rat studies indicate that the drug is a strong inhibitor of noradrenaline uptake and has a potency similar to that of desipramine. In contrast to the tricyclics, it strongly inhibits the dopamine (DA) uptake in striatal synaptosomes, whereas all tricyclic antidepressants exert only very weak effects on the DA system. There is also tentative evidence for a role of serotonergic component in the antidepressant activity of nomifensine. 15 references.

002290 Schley, J.; Siegert, M.; Muller-Oerlinghausen, B. Muller-Oerlinghausen: Lab. fur Klin. Psychopharmakologie, Psychiatrische Klinik, Freie Universitat Berlin, D-1000 Berlin 19, West Germany **Binding of perazine to alpha1-acid glycoprotein.** European Journal of Clinical Pharmacology. 18(6):501-504, 1980.

The immunoelectrophoretic identification of the binding agent in the high affinity binding of perazine to human serum protein as alpha1-acid glycoprotein is described. It is demonstrated by equilibrium dialysis that the average free fraction of 3H-perazine added to 22 sera from patients before neuroleptic treatment is 3.67% and that there is a significant correlation between the alpha1-acid glycoprotein content and the free fraction in these serum samples. This result is in accordance with what others have found for imipramine. It is suggested that the nature of this binding should be studied in more detail, since specific binding to alpha1-acid glycoprotein may be related to the receptor binding of perazine and possibly other drugs. 9 references. (Author abstract modified)

002291 Schran, Horst F.; Bhuta, Suryakant I.; Schwarz, Hans J.; Thorner, Michael O. Pharmaceutical Research and Development, Sandoz Pharmaceuticals, East Hanover, NJ 07936 **The pharmacokinetics of bromocriptine in man.** Advances in Biochemical Psychopharmacology. 23:125-139, 1980.

A specific radioimmunoassay for bromocriptine was used to study the pharmacokinetics of the ergot alkaloid in normal and hyperprolactinemic Ss. A positive, linear relationship between dose and peak plasma levels was found in the dose range of 1 to 7.5mg. Results of compartmental analysis were consistent with incomplete absorption and first pass metabolism of bromocriptine. First pass metabolism of the absorbed dose was 93.6%; 6.4% reached the systemic circulation unchanged with a half-life of 0.3 hours. Bromocriptine was excreted almost exclusively in the feces. 20 references.

002292 Simon, P.; Puech, A. J. Dept. de Pharmacologie, Fac. de Medecine, Pitie-Salpetriere 91, bd. de l'Hopital, F-75634 Paris Cedex 13, France /**Pharmacological reflections on O-anisamides.**/ Reflexions pharmacologiques sur les O-anisamides. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1003-1005).

The action mechanisms of the O-anisamide group, particularly metoclopramide and sulpiride, are examined. Aside from its psychotropic actions, the O-anisamides possess other properties useful in internal medicine: gastrointestinal and endocrinological. Application of drugs in this group is difficult since the drugs vary in their activity; however, all pharmacological action can be explained in terms of blockage of the dopaminergic receptors. It is concluded that knowledge of action mechanisms of these drugs will explain facts which may sometimes appear contradictory. 9 references.

002293 Smeraldi, E.; Scorza-Smeraldi, R.; Cazzullo, C. L. Institute of Clinical Psychiatry, University of Milan Medical School, Via F. Sforza 35, I-20122 Milano, Italy **HLA system and psychopharmacology.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 90-95).

Findings are presented from research to determine the possible role of HLA antigens in the action of psychopharmacologic drugs. The presence or absence of the HLA determinants cross-reacting with HLA-A1 on cellular membranes and their relationship to clinical response to chlorpromazine and haloperidol were investigated. The data suggest that these differences are not linked to different pharmacodynamics in CRAG-A1 positive or negative patients. Relapsed and nonrelapsed affective patients undergoing long-term lithium treatment display diverging HLA phenotype distributions. It was observed that the HLA chromosomic region is linked to genetic control of lithium ion distribution across membranes and that these factors interact in a complicated manner. 13 references. (Author abstract modified)

002294 Stefanis, C. N.; Lykouras, E.; Garelis, E.; Varsou, E. Dept. of Psychiatry, Athens Medical School, Eginition Hospital,

Athens, Greece **Cyclic AMP in psychoses and the effect of drugs.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 149-154).

Plasma cAMP in manic-depressive and schizophrenic patients was studied before and after neuroleptic drug treatment. The results are reviewed in correlation with currently held views on the biological mechanisms underlying this type of psychosis. Findings from preliminary investigations on diurnal and longitudinal variation of cAMP, as well as on the effect of physical activity on this nucleotide, are also reported. Results indicate that plasma cAMP concentrations are not significantly altered in the course of schizophrenic illness, and cAMP levels in manic-depressive patients were found to be more highly correlated with the mood rating than with the physical activity scoring. Additional factors that contribute to or influence the degree of physical activity are mentioned. 27 references. (Author abstract modified)

002295 Stoica, E.; Enulescu, O.; Caloinescu, C. Institute of Neurology and Psychiatry, Bucharest, Romania **Correction by propranolol of the abnormal adrenaline discharge induced by emotional stress in cerebral hemorrhage patients.** Neurologie et Psychiatrie. 18(2):119-126, 1980.

The effect of an emotional stimulus (simulation of oxygen administration by connecting the S with a closed-circuit narcosis apparatus) on adrenaline (A) and noradrenaline (NA) urinary excretion was studied in patients with cerebral hemorrhage who were or were not being treated with propranolol. A consistent postemotional increase in A urinary excretion and insignificantly changed postemotional NA excretion were noted in Ss not receiving propranolol. A 10-day propranolol treatment prevented the postemotional A excretion and replaced it with a consistent NA excretion. Catecholamine excretion after treatment in cerebral hemorrhage patients was similar to that of normal Ss. Since excessive A discharge may induce important rises in systolic blood pressure, propranolol may be a useful tool in controlling further hemorrhagic strokes. 22 references. (Journal abstract modified)

002296 Sutter, J. M.; Scotto, J. C. Clinique de Psychiatrie, Faculte de Medecine, Marseille, France **/Reflections on action mechanisms of psychotropic medications./** Reflexions a propos des mecanismes d'action des medicaments psychotropes. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1421-1425).

Theories on the action mechanisms of psychotropic drugs are discussed. The use of psychotropic medications is widespread due to its efficacy, but its mechanisms of action are not well understood. Psychiatric research is conducted to determine the aspects of the mechanisms which directly concern psychiatry (as opposed to biology). The best technique to date is to study the action of psychotropic drugs on mental disturbances. (Author abstract modified)

002297 Suva, J.; Janousek, I.; Kolomaznik, K. Dept. of Pharmacology, Karlovarska 48, 301 67 Plzen, Czechoslovakia **Levels of mineral elements in the serum and saliva of healthy male volunteers after a single dose of Li2CO3.** Activitas Nervosa Superior. 22(3):177-178, 1980.

The levels of mineral elements in the serum and saliva of healthy male volunteers after a single dose of lithium carbonate was tested. Li, Na, K, Ca, and Mg levels were determined in both serum and saliva (Zn and Cu levels in serum only), before administering Li and 2, 14, 26, 38, 50, and 62 hours afterward, by atomic absorption spectrometry. When determining Li in biological fluids by flame photometry or by atomic absorption spectrometry, saliva Li levels were found to be more than double the serum Li levels.

002298 Szabadi, E.; Gaszner, P.; Bradshaw, C. M. Dept. of Psychiatry, University of Manchester, Withington Hospital, Manchester, M20 8LR, England **The peripheral anticholinergic activity of tricyclic antidepressants: comparison of amitriptyline and desipramine in human volunteers.** British Journal of Psychiatry. 137(November):433-439, 1980.

The effects of three single oral doses (25mg, 50mg, and 100mg) of amitriptyline and desipramine, and of placebo were compared in a range of cholinergic functions (resting pupil diameter, pilocarpine evoked miosis, baseline sweating, carbachol evoked sweating, salivation, heartrate) in eight healthy volunteers. Three measures (pilocarpine-evoked miosis, carbachol-evoked sweating, and salivation) reflected the antimuscarinic property of the antidepressants. In two tests (pilocarpine-evoked miosis and salivation) amitryptyline was more potent than desipramine. Resting pupil diameter was not affected by amitriptyline, whereas desipramine caused mydriasis, indicating that pupil size is not a reliable measure of anticholinergic activity in the case of drugs which also affect adrenergic mechanisms. Baseline sweating and heartrate were not affected by the antidepressants. 30 references. (Author abstract modified)

002299 Thellier, Michel; Heurteaux, Catherine; Wissocq, Jean-Claude. Laboratoire Echanges cellularies, IBPC, LA CNRS 203, Faculte des Sciences et Techniques, F-76130 Mont-Saint-Aignan, France **Quantitative study of the distribution of lithium in the mouse brain for various doses of lithium given to the animal.** Brain Research. 199(1):175-196, 1980.

A quantitative study of the distribution of lithium in the mouse brain following various doses of lithium is described. Six hours after the last injection of lithium, the accumulation of Li was much larger in the areas with cellular bodies of neurons than in those with nerve trunks only, especially for the smaller dosages. While the accumulation curve as a function of Li concentration in the blood is linear for areas with nerve trunks only, it is negatively curved for the areas with cellular bodies. A saturation effect seems to appear as soon as the Li concentration in the blood is greater than 1 mM. 19 references. (Author abstract modified)

002300 Thoren, Peter; Asberg, Marie; Bertilsson, Leif; Mellstrom, Britt; Sjoqvist, Folke; Traskman, Lil. Asberg: Psychiatric Clinic, Karolinska Hospital, S-104 01 Stockholm 60, Sweden **Clomipramine treatment of obsessive-compulsive disorder: II. Biochemical aspects.** Archives of General Psychiatry. 37(11):1289-1294, 1980.

Concentrations of the serotonin metabolite 5-hydroxyindoleacetic acid (5-HIAA), the dopamine metabolite homovanillic acid, and the noradrenaline metabolite 4-hydroxy-3-methoxyphenyl glycol were measured in CSF before and after 3 weeks of treatment of severe obsessive-compulsive disorder with clomipramine hydrochloride. Patients who responded to clomipramine treatment had significantly higher CSF levels of 5-HIAA before treatment. The amelioration of obsessive-compulsive symptoms was positively correlated to the reduction of CSF concentrations of 5-HIAA during clomipramine treatment but negatively correlated to plasma concentrations of clomipramine. Reduction of CSF concentrations of 5-HIAA, which probably reflects drug action on central serotonin neurons, was maximal at a plasma clomipramine concentration of about 300 nm/l. At higher levels, the reduction of CSF levels of 5-HIAA was smaller. The antiobsessive effect of clomipramine may be connected to its capacity to inhibit serotonin uptake. 22 references. (Author abstract modified)

002301 Ticku, Maharaj K.; Huffman, Ronald D. Div. of Molecular Pharmacology, Dept. of Pharmacology, Univ. of Texas Health Science Center, 7703 Floyd Curle Drive, San Antonio, TX 78284 **The effects of acute and chronic morphine administration on GABA receptor binding.** European Journal of Pharmacology. 68(2):97-106, 1980.

A single injection of morphine (25mg/kg i.p.) decreased GABA binding in the cerebellum, cortex, and striatum of male Sprague-Dawley rats, a selective decrease in the number of high affinity GABA binding sites. GABA binding was not altered in rats treated chronically with morphine, except for an increase in pons medulla. However, GABA binding was significantly decreased in cerebellum and striatum during naloxone-precipitated withdrawal. This decrease reflected a decrease in the number of low affinity GABA receptor sites. 30 references. (Author abstract modified)

002302 Tolbert, Lelland C. Neurosciences Program, University of Alabama Medical Center, Birmingham, AL 35233 **Mechanism of action of benzodiazepines.** Alabama Journal of Medical Sciences. 17(2):168-170, 1980.

Research on the mechanism of action of benzodiazepines is briefly reviewed with emphasis on likely binding sites which make these compounds clinically potent as muscle relaxants and antianxiety agents. A number of neurotransmitter systems have been examined for potential interaction with the benzodiazepines, including catecholamines, serotonin, and acetylcholine, but recent opinion supports a primary interaction with the GABA neurotransmitter system. The effect that most clearly distinguishes the benzodiazepines from other psychoactive agents is the ability to increase behavioral output in a response-contingent punishment test. Further research is needed to identify the endogenous ligand for the benzodiazepine binding site. 5 references.

002303 Virtanen, R.; Scheinin, M.; Iisalo, E. Dept. of Pharmacology, Institute of Biomedicine, University of Turku, Kiinamyllynkatu 10, SF-20520, Turku 52, Finland **Single dose pharmacokinetics of doxepin in healthy volunteers.** Acta Pharmacologica et Toxicologica. 47(5):371-376, 1980.

A new radioimmunoassay was used to study the pharmacokinetics of doxepin (DOX) after oral administration (50mg) to eight healthy volunteers. Peak serum concentrations of DOX were observed 1 to 2 hours after administration and ranged between 59.1 and 107.4nmol/1. The disappearance of DOX was biphasic with a mean distribution half-life of 2.0 hours and elimination half-life of 17.9 hours. Peak concentrations of desmethyldoxepin (DDOX) were observed 1 to 6 hours after DOX administration. DDOX elimination was monophasic with a mean apparent half-life of 28.5 hours. Plasma concentrations of both substances were initially three to four times higher than concentrations in red blood cells, but at later times more DOX and DDOX were found in erythrocytes than in plasma. 23 references. (Author abstract modified)

002304 Volmat, R.; Vandel, S.; Bechtel, P.; Allers, G.; Vandel, B. Vandel: Laboratoire de Pharmacologie Clinique, C.H.U., Place St. Jacques, F-25030 Besancon, France **/Thymoanaleptic treatment control through measurement of plasma concentrations of amitriptyline and its metabolite nortriptyline./** Controle du traitement thymoanaleptique par la mesure des concentrations plasmatiques de l'amitriptyline et de son metabolite la nortriptyline. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 969-974).

The correlation between amitriptyline and nortriptyline plasma levels and therapeutic effects was studied. Two separate groups were tested; the first group contained 30 depressed patients, the second group had 61 patients. Results of the first test indicate a statistically curvilinear correlation between plasma levels of nortriptyline and clinical effects. In the second group a correlation was verified between plasma levels of amitriptyline and nortriptyline and therapeutic effect; a curvilinear correlation between amitriptyline levels and therapeutic effect was observed. It is concluded that a direct correlation between the two drugs and therapeutic efficacy exists in endogenous depression. 8 references. (Author abstract modified)

002305 von Knorring, L.; Johansson, F. Dept. of Psychiatry, Umea University, S-901 85 Umea, Sweden **Changes in the augmenter-reducer tendency and in pain measures as a result of treatment with a serotonin-reuptake inhibitor Zimelidine.** Neuropsychobiology. 6(6):313-318, 1980.

In patients suffering from chronic pain, visual evoked potentials (VEP) and pain measured (PM) were obtained before and after a 4-week, double-blind, controlled study of a new, rather selective, serotonin reuptake inhibitor, Zimelidine, versus placebo. Before the trial, most of the patients showed an argumenter response in VEP which means that the maximum amplitude of the evoked potential increased when stimulus intensity increased. After treatment most of the patients in the Zimelidine group revealed a reduced response, i.e., the maximum amplitude of the evoked potential decreased despite the increase of stimulus intensity, while no significant changes occurred in the placebo group. Only small and mostly insignificant changes were noted in PM. Results indicate that the augmenter/reducer response in VEP may be a useful measurement for following changes in the serotonergic pathways in CNS. Results also indicate that the treatment with Zimelidine may result in a decreased sensitivity to noxious stimulation that should be reflected in relief of clinical pain syndromes. 10 references. (Author abstract)

002306 Wendt, Ulrich. Bezirksnervenklinik, A. Saefkow-Allee 2, DDR-1800 Brandenburg, German Democratic Republic **/The question of minimum doses of anticonvulsants in the treatment of epilepsy./** Zur Frage minimaler antikonvulsivadosen bei der Behandlung der Epilepsie. Psychiatrie, Neurologie und Medizinische Psychologie. 32(7):419-423, 1980.

Serum level and EEG findings were studied in 40 epileptics treated as outpatients with minimum doses of anticonvulsants as a monotherapy. In all cases, the phenytoin levels were below the therapeutic range, the levels of the barbiturate derivatives were on an average higher in some cases even in the therapeutic range for this preparation. In spite of considerable EEG change, freedom from seizures over a period of many years was observed when minimum doses of the anticonvulsants were given. The results of the study and the consequences resulting from clinical work are summarized in the form of theses. 18 references. (Journal abstract)

002307 Wheatley, David. General Practitioner Research Group, Twickenham, England **Stress and hypertension: clinical implications.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 821-826).

Placebo-controlled studies of medazepam and lorazepam in hypertension, which showed that relief of anxiety symptoms accompanies reduction in blood pressure, are summarized. Several ways in which an antianxiety drug added to an antihypertensive drug may be effective in the treatment of hypertension include: better control of systolic and/or diastolic blood pressure; better control of anxiety symptoms; less postural hypotension; a lower dose of hypotensive drugs can be used to achieve the same effect; and a reduced incidence of complications. In a four-way comparison between lorazepam, bendrofluazide, lorazepam plus

bendrofluazide and placebo, a significant reduction in systolic BP occurred in the placebo group. However, significant reductions in diastolic BP only occurred in groups treated with lorazepam plus bendrofluazide and with bendrofluazide alone. The results have implications for studies of the influence of psychological stress in humans. 1 reference. (Author abstract modified)

002308 Yarowsky, Paul; Ingvar, David H. Laboratory of Cerebral Metabolism, Bldg. 36, Room 1A-27, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Neuronal activity and energy metabolism: a summary of a symposium. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 39 p.

A review of six symposium papers on neuronal activity and energy metabolism covers: 1) metabolism and recovery processes in peripheral nerves; 2) metabolism and functional activity in superior cervical ganglia (mammalian sympathetic ganglion); 3) oxidative metabolism and extracellular potassium in the central nervous system; 4) integrated functional activity and energy metabolism in the central nervous system; 5) cerebral energy metabolism in brain disorders; and 6) cerebral circulatory and metabolic correlates to mental activity. The symposium's aim was to demonstrate that at all levels of the nervous system the changes in cellular energy metabolism which accompany neuronal activity are substantially coupled to the maintenance and restoration of ionic gradients across neuronal membranes. Two main conclusions are presented: 1) today the functions of the nervous system can be studied in a fundamentally new fashion both in animals and in conscious man (multiregional metabolic techniques show that activation procedures alter the neuronal work into evoked metabolic responses); and 2) the three dimensional local cerebral metabolic rate (LCMR) techniques, and the rCBF techniques applied to man, enable--for the first time--a systematic study of neuronal biochemical events in the brain related to the highest functions of the nervous system, such as speech, memory, and cognition in general. 58 references.

002309 Yokochi, Masayuki; Kondo, Tomoyoshi; Hirayama, Keizo; Narabayashi, Hirotaro; Kuruma, Isami. Dept. of Neurology, Juntendo University, Tokyo, Japan **Comparative studies of L-DOPA alone and combination with a peripheral DOPA decarboxylase inhibitor, benserazide-HCl, on Parkinson's disease -- Part II: Pharmacokinetic study.** Brain and Nerve. 31(4):339-348, 1979.

The effects of L-DOPA alone and in combination with benserazide on Parkinson's disease were examined with data from five patients. After the administration of the combined drug, the urinary excretion of DOPA shared about 20% of total metabolites, whereas it shared only 0.7% after L-DOPA alone. The plasma level of DOPA was examined after oral administration of L-DOPA in combination with benserazide in various ratios. Results of blood concentration curve analyses suggest that the 4 to 1 ratio combination of L-DOPA and benserazide is better than the 10 to 1 ratio; blood profiles of DOPA were essentially similar to that observed following L-DOPA alone for both ratios. 21 references. (Author abstract modified)

002310 Zarifian, E. Centre Hospitalier Sainte-Anne, 1, rue Cabanis, F-75674 Paris Cedex 14, France **/Dopa and dopamine agonists in depression./** La dopa et les agonistes dopaminergiques dans la depression. Encephale. 5(5, Suppl.):665-670, 1979.

The functional organization of the ascending dopamine systems and the pharmacology of the dopamine synaptic receptors are considered. Emphasis is placed upon the differences induced by dopamine agonists during short-term and long-term treatment. Recent ideas on the heterogeneous nature of the dopamine receptors, and their specificity, and on their functional role are examined. The dopaminergic action of certain antidepressants is analyzed in terms of the different types of activity: presynaptic release, direct presynaptic agonism, or postsynaptic agonism. The role of dopaminergic transmission in depression is considered on the basis of clinical/biochemical correlations, and dopaminergic activity is linked with the other possible changes in cerebral monoamines by examining the interactions between the neurotransmitters. (Journal abstract modified)

002311 Zimmer, R.; Teelken, A. W.; Cramer, H.; Ackenheil, M.; Zander, K. J.; Fischer, H. Psychiatric Hospital, University of Munich, Munich, West Germany **Short- and long-term effects on GABA and dopamine neurons during treatment with sulpiride.** Advances in Biochemical Psychopharmacology. 24:537-539, 1980.

Short-term and long-term effects on GABA and dopamine neurons during treatment with sulpiride were investigated in 13 chronic schizophrenic patients. No difference in GABA levels in cerebrospinal fluid (CSF) was found between control Ss and untreated schizophrenic patients. However, by 30 days of sulpiride treatment, significant differences were found. It is suggested that the increase in CSF GABA is caused by inhibition of GABA uptake and/or increased GABA release during sulpiride treatment. The tendency of cyclic GMP to be increased at day 30 is consistent with the cyclic GMP increase in CSF during phenothiazine treatment. This increase could be due to the activity changes of the dopamine and GABA receptors in the basal ganglia. 14 references.

14 MECHANISM OF ACTION: BEHAVIORAL

002312 Agnoli, A.; Ruggeri, S.; Martucci, N.; Forchetti, C.; Lazzari, R. University of L'Aquila, L'Aquila, Italy **Cognition and psychosomatics.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 867-872).

Two classes of drugs are examined, the first one acting on the superior nervous functions (cognitive functions) and the second on the psychosomatic aspects of anxiety, or somatic complaints. The first class involves control of memory, attention, and learning. Using new neuropsychological and neuropharmacological techniques, it is possible to evaluate the action of nooanaleptics and nootropics on normal Ss or on Ss with pathological modifications in the superior nervous function (essentially dementia). The psychosomatic drugs include minor tranquilizers and anxiolytics, especially the benzodiazepines. Results are reported of a personality inventory and the study of neurovegetative reactions and anxiety in patients treated with nooanaleptics and nootropics, minor tranquilizers and placebo. The results emphasize the interaction between cognitive functions and anxiety, or psychosomatic symptoms. 10 references. (Author abstract modified)

002313 Baxley, Gladys B.; Ullmann, Rina K. Dept. of Psychology, University of Illinois, Urbana-Champaign, IL 61820 **Psychoactive drug effects in a hyperactive child: a case study analysis of behavior change and teacher attention.** Journal of School Psychology. 17(4):317-324, 1979.

The effects of methylphenidate on the behavior and teacher interactions of a 9-year-old hyperactive child were analyzed. Observations of the subject's task related and disruptive behaviors and of interactions between the subject and her classroom teacher were made when the child received the psychoactive drug and an inert placebo. Teacher's ratings of the subject's behavior and measures of her academic performance were also obtained. Results showed that when the subject was receiving methylphenidate, she engaged in task-related activities a greater percent of the time, had a higher percentage of teacher interactions that were instructional in quality, and received lower behavior ratings by the teacher than when she was receiving a

placebo. Results suggest that the use of medication may enable the hyperactive child to profit both behaviorally and academically. 25 references. (Author abstract)

002314 Bigelow, George E.; Griffiths, Roland R.; Liebson, Ira; Kaliszak, Julia E. Dept. of Psychiatry, Baltimore City Hospitals, Baltimore, MD 21224 **Double-blind evaluation of reinforcing and anorectic actions of weight control medications: interaction of pharmacological and behavioral treatments.** Archives of General Psychiatry. 37(10):1118-1123, 1980.

The reinforcing and anorectic actions of two phenethylamines were compared within the context of an outpatient behavioral pharmacological treatment program for overweight. A total of 59 Ss received dextroamphetamine sulfate, fenfluramine hydrochloride, or placebo in a double-blind procedure. Ss self-regulated drug intake for 4 weeks. The dextroamphetamine group was superior in terms of behavioral treatment participation, extent of eating and exercise habit change, and weight loss. Self-administration of dextroamphetamine was most well maintained, showing it to be a reinforcer, and self-administration of fenfluramine was suppressed below placebo levels. All Ss were conservative in drug use. These data concerning relative reinforcing efficacy within a therapeutic medication setting are discussed in relation to data from animal models used to assess relative abuse liability of these drugs. 16 references. (Author abstract modified)

002315 Cooper, Alan J. Sarnia General Hospital, Sarnia, Ontario, Canada **A clinical and endocrine study of mesterolone in secondary impotence.** Journal of Psychosomatic Research. 24(5):275-279, 1980.

The clinical and endocrine effects of mesterolone in secondary impotence were studied with 25 affected males. For each S there was a drug-free run-in period of 3 weeks, 3 weeks mesterolone (25mg t.i.d.), and a 3-week postdrug drug period. In 10 Ss pretrial androgen status was determined by measuring urinary testosterone on 72-hour pooled specimens. Throughout the study plasma testosterone levels were assayed weekly in the same 10 Ss. Patients made daily self-ratings on a specially-constructed sexual questionnaire relative to their impotence. Pretrial urinary testosterone levels were abnormally low in the 10 Ss studied, while plasma levels which did not vary throughout were within normal limits. It is concluded that clinically the drug was without significant benefits and there were no relationships between urinary testosterone, plasma testosterone, and the response to treatment. 25 references. (Author abstract modified)

002316 Dale, P. G. Coldeast Hospital, Sarisbury Green, Southampton, England **Lithium therapy in aggressive mentally subnormal patients.** British Journal of Psychiatry. 137(November):469-474, 1980.

Evidence is presented from tests of 15 aggressive mentally-retarded patients who were treated with lithium carbonate. There was an improvement in aggressive behavior in 11 cases, while three patients showed no change and one patient became worse during lithium treatment. The response to lithium therapy was assessed by clinical observation and retrospective analysis of daily ward reports. Treatment had to be discontinued in one patient who developed tardive dyskinesia but otherwise side-effects were not a problem. 15 references. (Author abstract modified)

002317 Davis, Kenneth L.; Mohs, Richard C.; Davis, Bonnie M.; Horvath, Thomas B.; Tinklenberg, Jared R.; Rosenberg, Gordon S.; Levy, Michael I. Dept. of Psychiatry, Bronx Veterans Administration, New York, NY **Human memory and the effects of physostigmine and choline chloride.** Psychopharmacology Bulletin. 16(4):27-28, 1980.

The effect of physostigmine and choline chloride upon memory functioning was investigated in a series of double-blind, controlled, cross-over studies. Daily doses of 16g choline chloride for 7 days or 8g choline chloride for 21 days failed to improve the ability of nondemented elderly people to learn new information. In a parallel experiment, neither 8g nor 16g daily of choline chloride enhanced memory functioning in normal young Ss. In contrast, intravenous physostigmine significantly improved the performance of six demented and three nondemented elderly Ss. Those patients whose duration of dementia was less than 2 years showed the most improvement. These results offer hope for a treatment for Alzheimer's disease, based upon the reversal of a presumed cholinergic deficit. 18 references.

002318 Draper, R. J.; Feldman, B.; Haughton, H. St. Patrick's Hospital, Dublin, Republic of Ireland **Trial of a peptide fraction of ACTH (ACTH4-10) in the alcoholic brain damage syndrome.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 785-790).

The cognitive effects of ACTH4-10, a heptapeptide which has been shown to be the shortest active fragment of ACTH, was compared to that of placebo in 60 Ss with alcoholic brain damage syndrome. Results of this double-blind procedure using a variety of bioelectrical and behavioral measures indicated no enhancement of memory or attention capabilities. The possible reasons for this finding, which contradicts previous research results, are discussed, along with the implications for future trials of neuropeptides. 17 references. (Author abstract modified)

002319 Dravet, C.; Bernardina, B. Dalla; Mesdjian, E.; Galland, M. C.; Roger, J. Centre Saint-Paul, 300, Bd de Sainte Marguerite, F-13009 Marseille, France **/Paroxystic dyskinesias during treatment with diphenylhydantoin./** Dyskinesies paroxystiaues au cours des traitements par la diphenylhydantoine. Revue Neurologique. 136(1):1-14, 1980.

Paroxystic dyskinesias which occurred in 10 patients with encephalopathy and severe epilepsy, accompanied by intellectual deficiencies, during treatment of epilepsy via diphenylhydantoin (DPH) are described. The abnormal movements were usually paroxystic in nature and were mainly athetosic or choreic in nature, affecting more particularly the facial region. None of the patients showed neurological signs during the attacks, which could suggest an overdose of DPH. The EEG showed no alternations. Blood levels of DPH were measured during the attacks in nine of the Ss and were within therapeutic limits in six cases and toxic in the other three cases. All patients were receiving multiple therapy. These findings are compared with those in the published literature describing 46 such cases. It is concluded that experimental and biological arguments favor an action of DPH on the metabolism of cerebral mediators. 38 references. (Journal abstract modified)

002320 Drew, William G.; Weet, C. R.; De Rossett, Sarah E.; Batt, John R. Dept. of Psychiatry, University of Kentucky Medical Center, Lexington, KY **Effects of hippocampal brain damage on auditory and visual recent memory: comparison with marijuana-intoxicated subjects.** Biological Psychiatry. 15(6):841-858, 1980.

A battery of tests clinically employed for the estimation of auditory and visual recent memory dysfunction was administered to eight Ss having circumscribed damage to the temporal lobe. It was hypothesized that the performance of Ss with temporal lobe lesions would qualitatively resemble that of Ss intoxicated with marijuana. Where comparisons could be made, the performance of these temporal lobe patients paralleled the performance of Ss acutely intoxicated with known doses of delta9-

tetrahydrocannabinol. Results are discussed in terms of cannabinoid actions on hippocampal functioning, and, in general, support the hypothesis that the action of marijuana may focus in the hippocampal region and produce behavioral changes similar to those resulting from traumatic injury or removal of the region. 40 references. (Author abstract)

002321 Duche, D.-J. Hopital de la Salpetriere, 47, boulevard de l'Hopital, F-75651 Paris Cedex 13, France **/Behavioral disturbances in psychiatry: a therapeutic approach./** Les troubles du comportement en psychiatrie: une approche therapeutique. Neuropsychiatrie de l'Enfance et de l'Adolescence. 28(9):427-429, 1980.

The use of beclamide in the treatment of behavioral disturbances in psychiatric patients is discussed. Although beclamide was originally thought to be an anticonvulsant, many clinicians have noted its positive effect on behavioral disturbances in epileptics. Experimentors are interested in its action on isolated disturbances or those associated with neurologic or mental illness in adults as such as in children and adolescents. Numerous double-blind cross-over studies have confirmed the positive results of this drug, especially on agitation and aggression in all age groups. Beclamide is well tolerated, causes no drowsiness, and is compatible with anticonvulsants and neuroleptics, thereby allowing reduction of dosage. 16 references.

002322 Ferrier, B. M.; Kennett, D. J.; Devlin, M. C. Dept. of Biochemistry, Faculty of Health Sciences, McMaster University, 1200 Main St. W., Hamilton, Ontario L8N 3Z5, Canada **Influence of oxytocin on human memory processes.** Life Sciences. 27(24):2311-2317, 1980.

The influence of oxytocin on human memory processes was assessed in six volunteers in a blind, cross-over design. The memory tests involved free recall of 20-four letter nonsense words and recognition of previously-seen pictures of faces. Tests of memory after intranasal or intravenous administration of large doses of oxytocin indicate that while learning is not affected, subsequent recall is impaired. This effect, which is transient, is opposite to that caused by vasopressin. 17 references. (Author abstract modified)

002323 Fischman, Marian W.; Schuster, Charles R. Dept. of Psychiatry, Pritzker School of Medicine, University of Chicago, 950 East 59th St., Chicago, IL 60637 **Cocaine effects in sleep-deprived humans.** Psychopharmacology. 72(1):1-8, 1980.

Eight normal healthy volunteers were tested in a reaction time task and a work output task after 24 and 48 hours of sleep deprivation with and without 96mg of inhaled cocaine. Cardiovascular changes and verbal report of mood change and drug effect were also monitored. Sleep deprivation produced a decrement in reaction time performance which was reversed by inhalation of cocaine. Heartrate increased after cocaine both under nonsleep-deprived conditions and sleep-deprived conditions. The magnitude of the drug-induced heartrate was, however, lower when Ss were deprived of sleep for 48 hours. Verbal reports of cocaine effects were similar to those reported for amphetamine, with no evidence supporting the idea of a postdrug depression immediately after the acute effects of the drug dissipated, although some rebound effects were noted 8 hours after drug administration. 16 references. (Author abstract)

002324 Fowler, L. Keith; Schiller, Maureen. Schiller: Farmitalia Carlo Erba Limited, Kingmaker House, Station Road, Barnet, Hertfordshire EN5 1NU, England **Euhypnos Forte, high dose temazepam for resistant insomnia: post-marketing surveillance in 10,057 patients unresponsive to conventional hypnotic dosage.** Journal of International Medical Research. 8(6):446-452, 1980.

A postmarketing surveillance study of Euhypnos Forte (Temazepam 20mg) capsules for the treatment of insomnia was conducted with 10,057 patients previously unresponsive to other hypnotics given in conventional doses. Patients were prescribed a nightly dose of 40mg or 60mg, but 95% actually took 40mg. At 2 weeks, 89% of patients found the treatment effective, as did 95% at 3 months. Hangover, severe enough to stop treatment, occurred in less than 3% of patients, and other adverse reactions were reported by only 6% of patients at 2 weeks and 4% at 3 months. Euhypnos Forte was effective in 88% of 3,800 patients who had found nitazepam unsatisfactory and 90% of 1,013 patients unresponsive to barbiturates. 8 references. (Author abstract modified)

002325 Gaillard, J.-M. Psychiatric Clinic of the University of Geneva, Geneva, Switzerland **Possible involvement of brain dopaminergic systems in the expression of emotions in dreams.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 142-145).

The involvement of brain dopaminergic systems in the expression of emotions in dreams was investigated in eight normal Ss who participated in experiments on paradoxical sleep. Ss received flunitrazepam or placebo in one experiment, while in the second experiment a sulpiride was administered. Both drugs modified manifestation of emotional contents in an opposite manner, thus supporting the involvement of brain dopaminergic systems in controlling emotions in this particular mental activity. Implications of the findings for studies of emotional disturbance and the role of dopaminergic systems in schizophrenia are suggested. 10 references.

002326 Gastpar, Markus. Psychiatrische Universitatsklinik, Basel, Switzerland **L-HTP and the serotonin hypothesis: their meaning for treatment of depression.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 535-540).

Research in support of the serotonin and 5-hydroxytryptophan hypothesis of depression is reviewed. Four areas of effort are summarized: 1) biochemical and metabolic studies of 5-HIAA levels in cerebrospinal fluid of depressed patients; 2) postmortem studies of serotonin and 5-HIAA in the human brain; 3) biochemical characterizations of antidepressant drugs; and 4) precursor studies of depressed patients. It is concluded that the evidence supports a serotonergic defect as a major disturbance in depressed patients, and that effective therapy involves 5-HTP administrations or postsynaptic 5-HT receptor blockers during a limited period. 40 references.

002327 Giurgea, C. University of Louvain, Pellenberg, Belgium **Nootropic and related drugs interacting with the integrative activity of the brain.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 876-881).

The neurophysiological approach to psychopharmacology, which assumes that a drug may act selectively on motor interneurons to relax muscles, on the hippocampus and the amygdala to reduce anxiety and aggressiveness, or upon the mezolimbic dopaminergic system to alleviate psychotic symptoms, was used to study a new class of drugs termed nootropics. These drugs are expected to improve the efficacy of higher telencephalic integrative activity, and results indicate that they: 1) improve learning ability and resistance of the learned material to impairing agents, 2) facilitate interhemispheric communication, and 3) enhance brain resistance to aggression. They are also devoid of the usual pharmacological effects and toxicity characteristic of psychotropics. Piracetam ((oxo-2-pyrrolidinyl-1)-2-acetamide) is the only nootropic drug presently used in human therapeutics

and some of its characteristics include: it is not metabolized, it passes all important physiological barriers, it does not interfere with common neurotransmitters (such as GABA, serotonin, catecholamines, or acetylcholine), it seems to activate selectively brain adenylate-kinase, and it seems to inhibit (with certain limitations) cortical release of proline. Piracetam-related compounds and brain active peptides are described, and emphasis is on two future directions of the utilization of nootropics: the correction of pathology and the improvement of normal function. 12 references. (Author abstract modified)

002328 Glass, Richard M.; Uhlenhuth, E. H.; Hartel, Frank W.; Schuster, Charles R.; Fischman, Marian W. Dept. of Psychiatry, University of Chicago, 950 East 59th St., Box 411, Chicago, IL 60637 **A single dose study of nabilone, a synthetic cannabinoid.** Psychopharmacology. 71(2):137-142, 1980.

The effects of single oral doses of nabilone, a synthetic cannabinoid, were studied in four anxious volunteer Ss, with emphasis on assessing the antianxiety effect of nabilone in subjects with high anxiety. High doses (4 or 5mg) of nabilone produced orthostatic hypotension, and small dose-related increases in heartrate were observed. The drug induced significant levels of subjective sedation but did not alter behavior maintained by a continuous avoidance procedure. Two Ss experienced an antianxiety effect from low doses (1 or 2ml) of nabilone, but the drug had no significant effect on the mean Profile of Mood States (a self-rating adjective checklist) anxiety factor for the group as a whole. Data suggest that nabilone has low potential as an antianxiety agent in clinical situations, and that many of the observed adverse effects of nabilone are compatible with a mild central anticholinergic syndrone. 27 references. (Author abstract modified)

002329 Hendel, Jorn; Elsass, Peter; Sorensen, Kirsten H.; Moller, I. W.; Hvidberg, Eigill F.; Hansen, Tage. Hvidberg: Dept. of Clinical Pharmacology, Rigshospitalet, Copenhagen, Denmark **Anxiety and sedation during a stressful situation after single dose of diazepam versus N-desmethyldiazepam -- a controlled trial.** Psychopharmacology. 70(3):303-305, 1980.

Twenty milligrams of diazepam (DZ) were compared with 20mg of its main metabolite, N-desmethyldiazepam (NDDZ) as single dose, oral premedication in a genuine stressful situation. Fifty patients participated in the randomized, double-blind controlled study. Anxiety and sedation were measured the day before an operation and one hour after premedication, just before the operation. NDDZ was significantly less sedative while the degree of anxiety was rated equal in the two groups. Results may support the hypothesis that a competition between DZ and NDDZ can explain the shift in the effect profile of DZ during long-term treatment. 15 references. (Author abstract modified)

002330 Hindmarch, I.; Clyde, C. A. Dept. of Psychology, University of Leeds, Leeds LS2 9JT, England **The effects of triazolam and nitrazepam on sleep quality, morning vigilance, and psychomotor performance.** Arzneimittel-Forschung. 30(7):1163-1166, 1980.

Repeated doses of triazolam .5mg and nitrazepam 10 mg were given to two groups of volunteers and measures of choice reaction time, critical flicker fusion threshold, and mental arithmetic ability were made the morning following nocturnal medication with either the active drug or placebo. Subjects' assessment of sleep and early morning behavior were obtained on 10cm line visual analogue scales. Both drugs were rated as effective hypnotics while, at the same time, ratings of the ease of awakening from sleep and the errors produced in a mental arithmetic task were impaired. Objective measures of performance and subjective reports of hangover differentiated nitrazepam from triazolam. A significant impairment of early morning performance found with nitrazepam was not found following treatment with triazolam. 20 references. (Author abstract)

002331 Hindmarch, I.; Parrott, A. C. Dept. of Psychology, University of Leeds, Leeds LS2 9JT, England **The effects of combined sedative and anxiolytic preparations on subjective aspects of sleep and objective measure of arousal and performance the morning following nocturnal medication: II. repeated doses.** Arzneimittel-Forschung. 30(7):1167-1170, 1980.

The effects of combined sedative and anxiolytic preparations on subjective aspects of sleep and objective measures of arousal and psychomotor performance on the morning following repeated nocturnal medications were evaluated in 12 healthy volunteers. Treatment conditions included: 5mg nitrazepam plus placebo; 352mg or 650mg dichloralphenazone plus 20mg or 10mg clobazam plus placebo; 100mg amylobarbitone sodium plus placebo; 20mg clobazam plus placebo; and placebo. Repeated doses of similar combinations showed that all active preparations improved subjective assessments of sleep. Some established hypnotics (amylobarbitone sodium) showed a hangover effect the morning following, while some anxiolytic/sedative combinations (clobazam/dichloralphenazone) showed no hangover. Nitrazepam produced an impairment in the recognition component, clobazam in the movement time component of the psychomotor task; while the dichloralphenazone/clobazam combinations had no significant effect on performance. Further research into anxiolytic/hypnotic drug interactions is recommended. 20 references. (Author abstract modified)

002332 Horvath, M.; Frantik, E.; Josifko, M. IHE, Srobarova 48, 100 42, Prague 10, Czechoslovakia **Vigilance impairing drugs: analysis of subjective responses.** Activitas Nervosa Superior. 22(3):188-191, 1980.

A paradigm for investigating the effects of drugs on vigilance performance and on subjective assessment of monotony and vigilance is discussed, and the effects of pentobarbitone, elemastine, dithiaden, and ethanol on vigilance are described. Ss perform simultaneously two simple tasks, discrimination of acoustical clicks and a visuomotor feedback task. Besides performance measures, drug effects are reflected in the subjective state of the Ss as assessed in a nine-point self-rating scale of sleepiness and fatigue and in an adjective checklist adapted from Lorr, McNair et al. 5 references.

002333 Hrbek, Jan; Macakova, J.; Komenda, S.; Dostalova, K.; Navratil, J.; Siroka, A. Dept. of Pathological Physiology, Dr. S. Allende St. 3, 775 15 Olomouc, Czechoslovakia **Acute effect of clorotepine (0.5mg and 1.0mg) and methaqualone (300mg) on verbal associations.** Activitas Nervosa Superior. 22(3):187, 1980.

The acute effects of clorotepine and methaqualone on verbal associations were investigated in 16 healthy volunteer Ss. Performance was assessed using the method of artificial conditioned speech connections. After 1 hour, methaqualone (300mg) produced a statistically significant impairment in number of repetitions necessary for mastering the task (NNR) number of correct responses (NCR), and frequencies of response (FR0) in the first eight repetitions of the set. After 2 hours, a marked impairment was noted only with methaqualone and the higher dose of clorotepine (1.0mg). 1 reference.

002334 Johanson, C. E.; Uhlenhuth, E. H. Dept. of Psychiatry, University of Chicago, Pritzker School of Medicine, Chicago, IL 60637 **Drug preference and mood in humans: diazepam.** Psychopharmacology. 71(3):269-273, 1980.

Amphetamine, diazepam, and placebo were compared in choice tests and subjective ranking in 10 normal human volunteers. Most Ss preferred amphetamine to placebo. Placebo and 2mg diazepam were chosen equally, but placebo was preferred to 5 and 10mg doses of diazepam and 5mg amphetamine was preferred to 2mg diazepam. Subjective effects reported on the Profile of Mood States showed that amphetamine increased vigor and arousal, whereas the 5mg and 10mg doses of diazepam decreased vigor and arousal and increased fatigue and confusion. Results are discussed in relation to the abuse liability of diazepam. 18 references. (Author abstract modified)

002335 Johanson, C. E.; Uhlenhuth, E. H. Dept. of Psychiatry, University of Chicago, Pritzker School of Medicine, Chicago, IL 60637 **Drug preference and mood in humans: d-amphetamine.** Psychopharmacology. 71(3):275-279, 1980.

Amphetamine (5mg) and placebo were compared in choice tests and subjective rankings in 31 normal human volunteers. In 5 sessions, Ss chose amphetamine a mean of 4.03 times. According to Profile of Mood States self-reports, amphetamine increased vigor, elation, friendliness, arousal, and positive mood and decreased confusion. Mood changes produced by d-amphetamine were similar in all Ss, regardless of the number of times each S chose the drug. Results are discussed in relation to the abuse liability of psychotropic drugs. 33 references. (Author abstract modified)

002336 Kawazu, Yusuke; Nakano, Shigeyuki; Ogawa, Nobuya. Dept. of Psychology, Faculty of Education, Yamaguchi University, Yamaguchi-shi, 753 Japan **Personality trait and antianxiety drug effects on psychomotor performance.** Progress in Neuro-Psychopharmacology. 4(3):285-292, 1980.

Personality trait and antianxiety drug effects on psychomotor performance were investigated among normal Ss with high or low neuroticism levels. Twelve high neurotic (HN) and 12 low neurotic (LN) male volunteer Ss received either 5mg diazepam, 10mg clobazam, or placebo in each of three counterbalanced treatment sessions. Ss practiced for nine trials before entering the experimental session on both the choice reaction time test (CRTT) and the mirror drawing test (MDT). Under placebo conditions, there were no differences between HN and LN Ss on the CRTT. Both diazepam and clobazam impaired the performane of HN Ss on the CRTT. 12 references. (Author abstract modified)

002337 Keuchel, I.; Kohnen, R.; Lienert, G. A. Lehrstuhl fur Psychologie, Universitat Erlangen-Nurnberg, Regensburger Str. 160, D-8500 Nuremberg, West Germany **The effects of alcohol and caffeine on concentration test performance.** Arzneimittel-Forschung. 29(6):973-975, 1979.

Concentration test performance following treatment with alcohol versus placebo and caffeine versus placebo was assessed in college Ss who participated in an arithmetic test. A second order interaction occurred between the three factors: alcohol as well as caffeine decreased concentration in males and combined treatment performance was interpreted synergistically. For females, alcohol as well as caffeine increased concentration while the combination of both had an antagonistic effect. (Journal abstract modified)

002338 Kubicki, S. Abt. fur Klinische Neurophysiologie, Klinikum Charlottenburg, Freie Universitat, West Berlin, West Germany **/EEG assessments of dosage and sleep profiles for a hypnotic drug of the triazolothienodiazepine series./** Elektroenzephalographische Dosis- und Schlafprofilbeurteilung eines Hypnotikums aus der Reihe der Triazolthienodiazepine. EEG-EMG 10:95-100, 1979.

The sleep-related effects of the hypnotic drug We-941 were studied at levels over and under the optimum dose of 0.3mg. The optimum dose reduced the time needed to attain sleep, and caused fewer sleep interruptions, and, in general, induced a long sleep period without resulting in an altered sleep profile. REM sleep was shown to be reduced insignificantly, returning to normal levels with continued therapy. Doses of less than 0.3mg prolonged deep sleep; doses greater than 0.3mg were less beneficial for patients' deep sleep and for general feelings of well-being. Doses of 1.0mg interfered with normal sleep. (Journal abstract modified)

002339 Kupfer, David J.; Coble, Patricia; Kane, Judith; Petti, Theodore; Conners, C. Keith. Dept. of Psychiatry, Western Psychiatric Institute and Clinic, University of Pittsburgh School of Medicine, Pittsburgh, PA **Imipramine and EEG sleep in children with depressive symptoms.** Psychopharmacology. 60(2):117-123, 1979.

The effects of imipramine on EEG sleep records of children with depressive symptoms were assessed. The EEG sleep of 12 children with significant depressive symptomatology was first examined after a 2-week drug-free period and again approximately 3 weeks later when an optimum dose of imipramine had been maintained for at least 7 to 10 days. Changes in sleep continuity, as reflected in increased wakefulness and a decreased sleep efficiency, as well as an increase in Stage 2 and a decrease in Stage 4 sleep were observed throughout the entire sample. REM suppression was also noted, but tended to be most pronounced in those children who improved on imipramine. 27 references. (Author abstract modified)

002340 Landauer, A. A.; Pocock, D. A.; Prott, F. W. Dept. of Psychology, University of Western Australia, Nedlands 6009, Western Australia **Effects of atenolol and propranolol on human performance and subjective feelings.** Psychopharmacology. 60(2):211-215, 1979.

The effects of atenolol and propranolol on human performance and subjective feelings were investigated. In a double-blind, double cross-over experiment, 18 healthy young men received over 3-day periods either 100mg atenolol, 80mg propranolol, or placebo. The Ss underwent various motor and cognitive tests 18 hr after each last dose had been taken. Propranolol significantly increased variability of a choice reaction time task. Scores on various subjective rating scales showed that propranolol had a larger mood elevating effect than atenolol. Heartrate and blood pressure were significantly reduced 24 hr after atenolol medication; these effects were absent or reduced after propranolol had been given. 17 references. (Author abstract modified)

002341 Leckman, J. F.; Gillin, J. C.; Sitaram, N.; Duncan, W.; Wyatt, R. J. Yale University School of Medicine, Child Study Center, 333 Cedar St., New Haven, CT 06510 **Intravenous chlorimipramine affects REM cycle in patients with excessive daytime sleepiness and control subjects.** Communications in Psychopharmacology. 4(1):35-40, 1980.

The sleep of five normal volunteers and four patients with excessive daytime sleepiness was studied following intravenous administration of 5mg chlorimipramine (CIM) during the first period of rapid eye movement (REM) sleep. There was a 95% increase in the duration of the first REM cycle (time lapsed from onset of first REM period to the onset of the second REM period) in all nine Ss compared to saline control nights. Other effects included a significant mean decrease in the postinfusion REM time and REM percentage to approximately one half of the control levels. The data suggest that small amounts of CIM administered i.v. in humans can acutely effect neural mecha-

nisms regulating the onset and duration of REM sleep. 18 references. (Author abstract modified)

002342 Lieberman, A. N.; Kupersmith, M.; Neophytides, A.; Gopinathan, G.; Casson, I.; Durso, R.; Foo, Sun H.; Khayali, M.; Tartaro, T. Dept. of Neurology, New York University School of Medicine, New York, NY 10016 **Bromocriptine in Parkinson's disease: report on 106 patients treated for up to 5 years.** Advances in Biochemical Psychopharmacology. 23:245-253, 1980.

Bromocriptine was administered to 106 patients with advanced Parkinson's disease and increasing disability despite treatment with levodopa and carbidopa. Bromocriptine decreased the severity of disease in 55 of these patients (54%) and in 49 of 75 patients (65%) able to tolerate at least 25mg/day bromocriptine. Of 28 patients treated with bromocriptine for at least 2 years, 21 showed a decrease in disease severity. Bromocriptine was discontinued in 54 of the 106 patients because of adverse effects including mental changes (29 patients) and involuntary movements (11 patients). All adverse effects were reversible. 27 references.

002343 Malcolm, R. E.; Sillett, R. W.; Turner, J. A. McM.; Ball, K. P. Ball: Central Middlesex Hospital, London NW10 7NS, England **The use of nicotine chewing gum as an aid to stopping smoking.** Psychopharmacology. 70(3):295-296, 1980.

The use of nicotine chewing gum as an aid to stopping smoking was evaluated. Two hundred and ten Ss entered a trial to test the use of chewing gum containing nicotine as an aid to stopping smoking. They were divided into three groups: nicotine chewing gum, placebo chewing gum, and control. The trial was double-blind between the two chewing gum groups. After 1 month, the percentage of confirmed nonsmokers in the nicotine gum group was 34%, in placebo chewing gum group 37%, and the control group 24%. By 6 months, most of the nonsmokers had relapsed, but the nicotine gum group (23%) was more successful than the placebo (5%) or the control group (14%). 9 references. (Author abstract modified)

002344 Marcelli, D.; Braconnier, A.; Duche, D.-J. Clin. de Psych. de l'Enfant et de l'Adolescent, Hopital de la Salpetiere, 47, boulevard de l'Hopital, F-75651 Paris Cedex 13, France **/Experimentation with minaprine in child psychiatry./** Experimentation de la minaprine en pedopsychiatrie. Neuropsychiatrie de l'Enfance et de l'Adolescence. 28(7-8):349-351, 1980.

The use of minaprine in child psychiatry in the treatment of various psychopathologies was studied. An average dosage of between 25 and 100 mg of minaprine was administered to 30 children (22 boys and 8 girls) between ages 6 and 19. Results indicate that the majority of the patient sample showed rapid improvement of apragmatism and inhibition, and a decrease of anxiety and autism. Tolerance was excellent in the majority of the cases.

002345 McGaugh, James L. University of California, Irvine, CA 92664 **Adrenaline: a secret agent in memory.** Psychology Today. 14(7):132, 1980.

Research is reported that demonstrates that the memory of rats is improved by drugs that affect the levels of epinephrine (adrenaline) and norepinephrine (noradrenaline). It is also reported that amnesia produced by a drug that inhibits norepinephrine synthesis can be reversed by injecting norepinephrine into the brain after training. D-amphetamine did not improve memory when injected directly into the brain, but memory was enhanced by injections of a form of amphetamine (4-hydroxyamphetamine) that does not readily enter the brain. This finding suggests that both forms of amphetamine act by releasing norepinephrine and epinephrine from the adrenal medula. An evolutionary process which might explain the link of the release of adrenaline with memory is discussed.

002346 Mendelson, Wallace B. Building 10, Room 3N224, NIMH, Bethesda, MD 20205 **The clock and the blue guitar: studies of human growth hormone secretion in sleep and waking. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 43 p.

The effects of pharmacologic alterations of neurotransmitters on insulin-induced and sleep-related growth hormone (GH) secretion were observed in a series of studies. It was found that the same pharmacological agent may have very different effects on these two forms of secretion. These studies suggest that sleep-related and insulin-induced GH secretion differ either quantitatively or qualitatively in the roles played by several classes of neurotransmitters. The significance of these findings is considered in terms of circadian alterations in concentrations and numbers of receptors of some neurotransmitters, as well as physiologic correlations inherent to sleep. The relation of these processes to psychiatric illness and aging is considered. In a second type of study, human GH was administered to normal volunteers, and sleep EEG and waking cognitive and affective measures were observed. It was found that GH administration resulted in decreased slow-wave sleep and increased REM sleep. The possibility that GH may play a direct role in the central nervous system and in sleep regulation is discussed. 89 references. (Author abstract modified)

002347 Mendlewicz, J.; van Praag, H. M. no address **Psychoneuroendocrinology and abnormal behavior.** Advances in Biological Psychiatry. Volume 5. New York, S. Karger, 1980. 128 p.

Papers presented at an Interdisciplinary Society of Biological Psychiatry Symposium on Psychoneuroendocrinology and Abnormal Behavior, held in Brussels in 1979, are reprinted. Areas covered include: an overview of the current field of endorphin research; the hypothesis that certain psychopathological syndromes in man are due to abnormal production or deficiency of certain endorphins; neuropeptides and their potential clinical significance; an overview of prolactin research; the importance of prolactin research in psychiatric disease and in neuroleptic treatment programs; growth hormone increase in nonendogenous depression during treatment with antidepressants; the relation between depressive illness and increased function of the hypothalamic-pituitary-adrenocortical system; the specificity of abnormal cortisol excretion and the dexamethasone suppression test in endogenous depressive states; and the growth hormone and testosterone deficiency in chemical diabetic and impotent male patients.

002348 Mielke, David H. Dept. of Psychiatry, Tulane University Medical Center, New Orleans, LA 70112 **Early activity studies and intensive drug evaluations of new psychopharmacologic agents.** Final Report, NIMH Grant R10-MH-3701, 1979. 44 p. (Unpublished paper).

A review of 20 years of research work at Tulane University, which covers early activity studies and intensive double-blind drug evaluations of new psychopharmacologic agents, is presented. The goals of the research were: 1) to determine the potential activity and the relative therapeutic effectiveness of new neuropsychopharmacological compounds in severely ill and chronically hospitalized schizophrenic patients, acute adult and adolescent schizophrenics, primary affective disorders including bipolar and unipolar illness in outpatients, nonpsychotic chronic alcoholic inpatient and outpatient subgroups with primary affective disorder and/or anxiety, and extremely aggressive and hyperactive adolescents; and 2) to use different laboratory extrac-

tion procedures for measuring blood concentrations of various antipsychotic, antidepressant, and antianxiety agents. The results obtained were evaluated for possible correlations between blood concentrations of these various compounds with the clinical responses of the patients to these agents as well as the blood concentrations required to produce cardiac and central nervous system side-effects. 143 references.

002349 Nakazawa, Yoichi; Kotorii, Tatayu; Horikawa, Shuichi; Kotorii, Makoto; Ohshima, Masachika; Hasuzawa, Hiroaki. Dept. of Neuropsychiatry, School of Medicine, Kurume University, 830 Kurume, Japan **Individual variations in the effects of flurazepam, clorazepate, L-dopa and thyrotropin-releasing hormone on REM sleep in man.** Psychopharmacology. 60(2):203-206, 1979.

The comparative effects of flurazepam, clorazepate, L-dopa, and thyrotropin releasing hormone (TRH) on REM sleep were investigated in normal, healthy adults. A single dose of each drug was given orally to the Ss 30 min before bedtime. A dose of 30mg flurazepam significantly decreased REM sleep time when compared to the mean baseline record. No change was noted in REM sleep time on the clorazepate night, L-dopa night, or TRH night, when compared to the mean baseline record. Because large individual variations were found in REM sleep time on each drug night, and in percentage increase in REM sleep following partial differential REM deprivation (PDRD), correlation between them was investigated. The percentage decrease in REM sleep during flurazepam was found to have a significant negative correlation with the percentage increase in REM sleep after PDRD in individual Ss. Although there is no significant change in REM sleep on TRH night when compared to the mean baseline record, a similar significant negative correlation was noted. On the L-dopa night, there was a tendency toward a negative correlation between them. 24 references. (Author abstract modified)

002350 Okudaira, Nobuyuki; Torii, Shizuo; Endo, Shiro. Dept. of Physiology, Toho University School of Medicine, Tokyo, Japan **The effect of butoctamide hydrogen succinate on nocturnal sleep: all-night polygraphical studies.** Psychopharmacology. 70(2):117-121, 1980.

Butoctamide hydrogen succinate (BAHS), related to an organic compound naturally occurring in the CNS, was shown to increase REM sleep in healthy human volunteers. BAHS or placebo was administered to the six male Ss at 10:00 PM; recording began at 11:00 PM. There was little change in total sleep time, sleep efficiency index, sleep latency, REM sleep latency, or the number of REM sleep periods during the drug as compared to the baseline periods. There were, however, significant increases in REM sleep and decreases in sleep stages 1 and 2. The night's sleep was divided into three equal portions and analysis of the percentage of sleep stages in each showed that REM markedly increased in the middle third while stages 3 and 4 increased in the last third. A carryover effect of BAHS was recognized during the withdrawal period. Results suggest that BAHS may be an efficacious hypnotic in that it increases REM sleep which is suppressed by other clinically-used hypnotics. 15 references. (Author abstract modified)

002351 Parrott, A. C.; Hindmarch, I. Dept. of Psychology, University of Leeds, Leeds, LS2 9JT, England **The Leeds Sleep Evaluation questionnaire in psychopharmacological investigations – a review.** Psychopharmacology. 71(2):173-179, 1980.

The use of the Leeds Sleep Evaluation Questionnaire (SEQ) in psychopharmacological investigations is reviewed. Dose-related improvements in SEQ ratings of getting to sleep and perceived quality of sleep have generally been associated with reductions in self-reported levels of alertness and behavioral integrity the morning after nocturnal administration of sedative/hypnotic and antianxiety agents. Psychostimulants have been associated with SEQ reports of impaired sleep and increased early morning alertness. Certain antidepressant and antihistamine agents produced effects similar to sedative/hypnotics, but others did not affect self-reported aspects of sleep and early morning behavior. 37 references. (Author abstract modified)

002352 Pearlman, Theodore. 6608 Fannin, Suite 717, Medical Towers, Houston, TX 77030 **Behavioral desensitization of phobic anxiety using thiopental sodium.** American Journal of Psychiatry. 137(12):1580-1582, 1980.

A random sample of 25 patients who were suffering from a variety of phobic anxiety states and who were treated with desensitization using thiopental sodium combined with progressive reduction in the use of oral anxiolytic medication was evaluated. At 24-week followup, 11 of the patients reported mild symptoms of phobic anxiety and 14 reported none. Nine of the patients reported their use of tranquilizers had decreased and 15 reported they had used none for at least 2 weeks. These results demonstrate the usefulness of the treatment in producing sustained reduction of phobic anxiety and tranquilizer use. 4 references. (Author abstract)

002353 Post, Robert M. Section on Psychobiology, Bldg. 10, Rm 3S239, NIMH, 9000 Rockville Pike, Bethesda, MD 20205 **Psychomotor stimulants as activators of normal and pathological behavior: implications for the excesses in mania. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 42 p.

The thesis is presented that the psychomotor stimulants may affect basic mechanisms normally involved in motivation, memory, and stress activation that can be driven to excess, and that dissection of the important variables related to stimulant administration may thus help clarify mechanisms underlying the evolution of pathological behavior and its treatment. Psychomotor effects of amphetamine and cocaine in animals and man are discussed. Variables affecting the degree of behavioral excesses are discussed in terms of: continuity of drug exposure (interval between drug administration); genetics; previous exposure (relation to psychic induction); environmental context; internal state dependency; relation to normal behavior and stress; the effects of psychomotor stimulants on learning and memory; brain stimulation rewards in animals; self-administration of stimulants; and treatment of psychomotor stimulant and associated behavioral excesses. 77 references.

002354 Rapoport, Judith L.; Mikkelsen, Edwin J.; Zavadil, Anthony; Nee, Linda; Gruenau, Cynthia; Mendelson, Wallace; Gillin, Christian. Bldg. 10, Room 3N-204, Biological Psychiatry Branch, National Institue of Mental Health, Bethesda, MD 20014 **Childhood enuresis: II. Psychopathology, tricyclic concentration in plasma, and antienuretic effect.** Archives of General Psychiatry. 37(10):1146-1152, 1980.

The efficacy of treatment with imipramine hydrochloride, desipramine hydrochloride, methscopolamine bromide, and placebo was compared with 40 severely enuretic boys. Both tricyclic antidepressants were superior to placebo and methscopolamine, but they did not differ from each other. Psychiatric disturbance, sleep measures, and other clinical parameters did not predict antienuretic response to tricyclics nor was there a psychotropic response. Plasma concentrations of imipramine and desipramine showed a significant correlation with clinical effect. However, true nonresponders were found, and tolerance to the antienuretic drugs developed in some boys. 32 references. (Author abstract)

002355 Rizzo, P. A.; Amabile, G.; Carporali, M.; Pierelli, F.; Spadaro, M.; Zanasi, M.; Morocutti, C. Clinica Neurologica, Universita di Roma, Roma, Italy **CNV variations induced by the administration of diazepam, haloperidol, phenelzine and d-amphetamine.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 924-928).

Possible correlations between contingent negative variation (CNV) and administration of psychotropic drugs were investigated in 20 normal Ss who were injected with diazepam, haloperidol, phenelzine, d-amphetamine, and a placebo. A decrease in CNV voltage was observed following diazepam administration. The same occurred after haloperidol injection along with an increase in latency time. Phenelzine administration caused an increased voltage, while amphetamine brought about increasing voltage and decreasing latency time. Such changes were detected in different times. The findings are discussed on the basis of pharmacodynamics of the drugs involved. It is suggested that medicaments induce changes in the active and voluntary attention of subjects to the task (conative attention) or in the abstract modified)

002356 Roccatagliata, Giuseppe; Albano, Claudio; Maffini, Maura; Farelli, Sofia. Aiuto Clinica Neurologica, Universita di Genova, Genova, Italy **Alcohol withdrawal syndrome: treatment with trazodone.** International Pharmacopsychiatry. 15(2):105-110, 1980.

The behavioral effects of trazodone, a recently-developed drug with dopamine and serotonin-stimulating action and norepinephrine-blocking action, on alcohol withdrawal syndrome were investigated in 17 patients whose alcohol addiction was related to a depressive neurotic state. The Hamilton rating scale was administered prior to and after 10 days treatment with 100mg/day trazodone. Results show a significant global improvement and a selective regression of the clinical features most marked pretreatment (mild depression, anxiety, and marked neurasthenic aspects). Postural tremor completely disappeared after 3 to 5 days of treatment, and no adverse reactions were found. In conjunction with previous animal studies of alcohol withdrawal syndrome, the positive therapeutic results make it conceivable that monoaminergic pathway dysfunction has an important pathophysiological role in alcohol withdrawal syndrome in man. 29 references. (Author abstract modified)

002357 Roth, Thomas; Hartse, Kristyna M.; Saab, Patrice G.; Piccione, Paul M.; Kramer, Milton. Sleep Disorders and Research Center, Henry Ford Hospital, Detroit, MI 48202 **The effects of flurazepam, lorazepam, and triazolam on sleep and memory.** Psychopharmacology. 70(3):231-237, 1980.

The effects of flurazepam, lorazepam, triazolam, and placebo upon sleep and memory were evaluated in 11 normal male Ss continuously monitored for nighttime EEG, electrooculogram, and EMG recording. Ss received each drug or placebo for two consecutive nights per week for 4 weeks in a repeated measures, double-blind, Latin square design. Three hours postadministration, Ss were awakened and presented with a series of tasks. Recall was assessed immediately following task presentation and after the final morning awakening. Results show that each drug significantly decreased stage 1, increased stage 2, and produced no change in stages 3 and 4 sleep in comparison to placebo. Results indicate that failure of memory consolidation rather than failure of retrieval is the most likely explanation for the morning memory loss, and that hypnotic drug properties, measured by latency to fall back asleep, affect memory consolidation. 21 references. (Author abstract modified)

002358 Schachter, M.; Marsden, C. D.; Parkes, J. D.; Jenner, P.; Testa, B. King's College Hospital, Denmark House, London SE5 9RS, England **Deprenyl in the management of response fluctuations in patients with Parkinson's disease on levodopa.** Journal of Neurology, Neurosurgery, and Psychiatry. 43(11):1016-1021, 1980.

The action of deprenyl in the management of response fluctuations in patients with Parkinson's disease on levodopa was examined. In a double-blind crossover trial against placebo, deprenyl prolonged the action of levodopa and produced an objective improvement in mobility in five of 10 patients with dose-related response swings and a subjective improvement in four other patients. In another group of seven patients with random fluctuations in symptoms, only two noted subjective improvement and there was an apparent increase in the severity of reponse swings in five patients. Deprenyl exacerbated dyskinesias, but had no serious side-effects. It is concluded that deprenyl may be a useful adjuvant in the management of dose-related response fluctuations in patients on levodopa therapy but is unlikely to benefit patients with random response swings and may cause deterioration in such cases. 30 references. (Author abstract modified)

002359 Sostek, A. J.; Buchsbaum, M. S.; Rapoport, J. L. Buchsbaum: Section on Clinical Psychophysiology, NIMH, Building 10, Room 2N212, Bethesda, MD 20205 **Effects of amphetamine on vigilance performance in normal and hyperactive children.** Journal of Abnormal Child Psychology. 8(4):491-500, 1980.

Signal detection analysis was applied to the vigilance performance of 15 hyperactive and 14 normal boys divided into two age groups (6 through 9 and 10 through 12 years) to test the view that deficient sustained attention is a hyperactive symptom that can be improved by stimulant medication. A computerized continuous performance test was administered under amphetamine and placebo. Overall group comparisons indicated that perceptual sensitivity or d' was higher for normal Ss and the older groups. Amphetamine significantly increased d'. Interactions between drugs and age groups demonstrated that amphetamine affected younger Ss to a significantly greater degree than older Ss for both d' and response bias. It is notable that the results were essentially parallel for both normal and hyperactive children. 23 references. (Author abstract modified)

002360 Sourander, L.; Blakemore, C. B. no address **Effects of cyclospasmol upon sensory parameters in patients recovering from cerebrovascular accidents.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p.843-848).

Two studies investigated the therapeutic response to cyclandelate of geriatric patients recovering from past cerebrovascular accident. Emphasis is on sensorimotor and perceptual response, and the results from study (40 Ss) suggest that the major benefit of cyclandelate treatment in hospitalized long-stay, geriatric patients with past cerebrovascular accidents is improved kinesthetic perception, which suggests an increased ability in spatial orientation and control of horizontal plane. Findings in study 2 (54 Ss) suggest that there is significant improvement in poststroke recovery patients on the variables of sense of balance, kinesthetic perception and visual perception at dosages of 1600mg and 2400mg per day, while there is no such improvement at 800mg per day. 1 references.

002361 Taberner, P. V. Dept. of Pharmacology, Medical School, University of Bristol, University Walk, Bristol BS8 1TD, England **Sex differences in the effects of low doses of ethanol on human reaction time.** Psychopharmacology. 70(3):283-286, 1980.

The effects of low doses of ethanol on human time were investigated using male and female college student volunteers. Ethanol at 7.6ml/kg produced a significant lengthening of the reaction time in male volunteers between 0.5 hr and 1.5 hr postdrink and in females at 1.5 hr postdrink. Reaction times in both sexes were prolonged by 1.5ml/kg ethanol. Blood ethanol levels were not significantly different between males and females at 0.5 hr or 1.5 hr after drinking 7.6ml/kg. Male Ss had significantly faster reaction times than females prior to consumption of ethanol. 11 references. (Author abstract modified)

002362 Taeuber, K. Hoechst Aktiengesellschaft, Medizinische Abt. (H 840), Postfach 80 03 20, D-6230 Frankfurt (Main) 80, West Germany **Subjective drug effects and drug preference in healthy volunteers as a model of a drug's reinforcing effects: studies on nomifensine, amphetamine and placebo.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1030-1034).

Two experiments investigated the subjective effects produced by nomifensine, amphetamine, and placebo on healthy volunteers to determine if nomifensine's reinforcing effect in man may lead to drug dependence. It was assumed that amphetamine-like drugs may produce a change in emotional status which is experienced as pleasant, and that this effect serves as a positive reinforcement which increases the probability that the S will take the drug again. The results indicate that 100mg and 200mg doses of nomifensine do not produce typical amphetamine effects, and that biochemical and pharmacological similarities between the two compounds are not relevant with respect to behavioral effects.

002363 Targum, Steven D. Psychiatric Institute of Washington, 2033 K Street, NW, Suite 202, Washington, DC 20006 **Family tree gives clues to treating psychoses.** American Pharmacy. NS20(11):44-47, 1980.

Familial factors in-risk for affective illness are examined with clinical implications. Use of the family history may be helpful in distinguishing between biological and environmental etiologies, and determining other relatives who are likely to be at-risk for unipolar or bipolar illness. In general, drug therapy for environmentally-precipitated depression is ineffective because it does not treat the underlying psychosocial problem, but biological syndromes are often amenable to drug treatment. Principal antidepressants include lithium salts, tricyclic antidepressants, and monoamine oxidase inhibitors. Two case examples are given involving diagnosis and prescription of treatment. One shows how family and psychopharmacological response history helped clarify the clinical and eventual prognosis picture and the other demonstrates rectification of a misdiagnosis. 11 references.

002364 Thompson, Travis; Dews, Peter B. Dept. of Psychiatry, University of Minnesota, Minneapolis, MN 55455 **Advances in behavioral pharmacology. Vol. 2.** New York, Academic Press, 1979. 263 p. $23.00.

Major research areas in behavioral pharmacology (psychopharmacology) are covered, and a synthetic and analytical review of significant factors involving the effects of drugs on the behavior of both humans and experimental animals is provided. Areas covered include: drug effects of spontaneous motor activity in the mouse; interrelations among prior experience and current conditions in the determination of behavior and the effects of drugs; the effects of drugs on male sexual function; drug effects on agonistic behavior; psychomotor stimulants and hallucinogens; measurement of various aspects of self-administration and reinforcing functions of drugs; procedures for reducing drug intake; and drug effects on repeated acquisition.

002365 Thornton, Christine; Dore, Caroline J.; Elsworth, J. D.; Herbert, M.; Stern, G. M. Clinical Research Centre, Division of Anesthesia, Harrow, Middlesex, HA1 3UJ, England **The effect of deprenyl, a selective monoamine oxidase B inhibitor, on sleep and mood in man.** Psychopharmacology. 70(2):163-166, 1980.

The effect of (-)deprenyl, a rapidly-acting selective monoamine oxidase (MAO) type-B (MAO-B) inhibitor, on the sleep and mood of six healthy, young male adults was investigated. Urinary phenethylamine concentration was raised in all Ss. Ss were unaware of any sleep disturbance due to the drug although the EEG showed increased wakefulness. The onset of REM sleep was delayed and the total amount reduced; the amount of stage 2 sleep was increased. The only effect of the drug on mood was to decrease the level of alertness prior to sleep. There was a slight but significant increase in the presleep systolic blood pressure. There were no effects due to drug withdrawal. 22 references. (Author abstract modified)

002366 Uhde, Thomas W.; Post, Robert M.; Siever, Larry J.; Buchsbaum, Monte S. Section on Psychobiology, Biological Psychiatry Branch, National Institute of Mental Health, Bethesda, MD 20205 **Clonidine and psychophysical pain.** Lancet. No. 8208/9:1375, 1980.

The effect of clonidine on psychophysical pain in 12 healthy, drug-free volunteers was studied. An index of pain insensitivity was obtained 1 1/2 hours after the intravenous infusion of clonidine and placebo. Ss rated shocks ranging from 1 to 31 milliamperage. Findings indicate that clonidine, at doses which reduce blood pressure and are sufficient to attenuate opiate withdrawal, lack analgesic activity as measured by the pain insensitivity index. 15 references.

002367 Varma, Rajendra; Michos, George A.; Varma, Ranbir S; Hoshino, Arthur Y. Psychiatry Dept., Warren State Hospital, Warren, PA 16365 **Clinical trials of depakene (valproic acid) coadministered with other anticonvulsants in epileptic patients.** Research Communications in Psychology, Psychiatry and Behavior. 5(3):265-273, 1980.

Therapeutic response to and effects of comedication with valproic acid (VPA) on the blood levels of other medications were studied in 16 epileptic patients whose seizures were refractory to other commonly-used anticonvulsants or VPA alone. Inclusion of VPA controlled seizures in these patients, but also altered blood levels of coadministered anticonvulsants. Phenytoin levels were lowered in six, raised in four, and unchanged in three patients. Blood phenobarbital levels were lowered in one patient, raised in five, and unchanged in four. VPA slightly lowered blood levels of primidone, while tegretol levels were slightly raised in one and lowered in three patients. Possible causes for the nonuniformity of these effects of VPA on other anticonvulsant drugs are discussed. In patients on monotherapy, plasma VPA levels increased fairly proportionally to dose, no such relationship was noted in patients receiving combination therapy with VPA and other anticonvulsants. 14 references (Author abstract modified)

002368 Waller, Dick; Levander, Sten. Laboratory for Psychology and Psychophysiology, Dept. of Psychiatry, Karolinska Hospital, S-104 01 Stockholm, Sweden **Smoking and vigilance: the effects of tobacco smoking on CFF as related to personality and smoking habits.** Psychopharmacology. 70(2):131-136, 1980.

The effects of tobacco smoking on vigilance (critical flicker fusion, CFF) measured by a computerized forced-choice interactive technique, was studied in a group of 28 male moderate smokers. Ss participated in a smoking and nonsmoking condition, each of 1-hour duration. CFF performance was measured during 15 2 min trials in each condition. In the smoking condi-

tion, Ss smoked three puffs during each of five pauses between five successive trials. Vigilance was significantly improved by smoking. An initial sharp increase in CFF performance was noticed with a maximum 8 min after the first puff. Performance was significantly higher in the S condition compared to the NS condition up to 20 min after the last puff. Two extreme groups, based on differences in CFF performance between the smoking and nonsmoking condition were compared by questionnaires on personality and smoking habits. The most improved group had significantly higher scores in an extraversion scale. Ratings of the effect of smoking on level of alertness indicate that the objective effect of increased vigilance has no counterpart on the subjective level. 23 references. (Author abstract modified)

002369 Ziskind, E.; Maltzman, I.; Tharp, V. K. Gateways Hospital, Los Angeles, CA **Neuropeptide treatment of sociopathy: research in progress.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 774-779).

The effect of naloxone conditioning of compulsive gambler sociopaths and normal controls was assessed using intramuscular injections of 0.4mg naloxone or water in a double-blind randomized fashion prior to the gradient of fear experiment. Ss were administered three tests: the original gradient of fear experiment and the same procedure repeated on two other occasions, each preceded by naloxone or water injections. A pilot naloxone experiment yielded negative results: naxolone (in experimental doses) did not produce a significant difference between compulsive gamblers and controls in the number of their anticipatory responses. The findings relate most directly to opiate receptor research, and the research paradigm can serve as a screening device to aid in overcoming current roadblocks to opiate receptor research. 15 references. (Author abstract modified)

15 TOXICOLOGY AND SIDE EFFECTS

002370 Ackenheil, Manfred. Nervenklinik, Universitat Munchen Psychiatrische Klinik und Poliklinik, Nussbaumstr. 7, D-8000 Munchen 2, West Germany **/Long-term treatment with neuroleptic agents: adaptation phenomena and their significance with regard to schizophrenic symptomatology and side-effects./** Traitement au long cours par les neuroleptiques: phenomenes d'adaptation et leur signification pour la symptomatologie schizophrenique et les effets secondaires. Psychologie Medicale. 12(12):2615-2621, 1980.

Information concerning biochemical and neuroendocrinological research on long-term effects of neuroleptics is presented. The most important result of this research is the observation of adaptive phenomena during the course of treatment. These are especially noticeable when medication is interrupted. There appear to be different biochemical subgroups of schizophrenia, which should be considered during future research. It is suggested that, through testing, patients should be grouped biologically before being treated with neuroleptics. 16 references. (Journal abstract modified)

002371 Agnoli, A.; Ruggeri, S.; Falaschi, P.; Baldassarre, M.; D'Urso, R.; Forchetti, C.; Polleri, A. Clinica Neurologica, University of L'Aquila, Genoa, Italy **A neuropharmacological and neuroendocrine study on idiopathic and chronic pharmacological parkinsonism.** Advances in Biochemical Psychopharmacology. 24:551-557, 1980.

The possible correlation between the clinical state and the degree of receptor and neuronal involvement was studied in chronic pharmacological and idiopathic parkinsonism, using various biological indices of the activity of the central dopamine (DA) systems. In chronic pharmacological parkinsonims, there is an increased central DA turnover. The inhibitory DA tone on prolactin (PRL) secretion is reduced. The clinical state indicates an altered function of the nigrostriatal DA system. The pituitary DA receptor normally reacts to pharmacological stimuli. It is hypothesized that there exists a normally functioning receptor but a reduced DA production at nigrostriatal level (parkinsonism) and at tuberoinfundibular dopaminergic level (high basal PRL and abnormalities of circadian rhythm). In nonresponding parkinsonian patients, chronic L-DOPA treatment caused a reduced DA inhibitory tone on the galactotrophy (increased basal PRL); pituitary DA receptors showed a poor response to pharmacological stimuli. It is likely that in nonresponders the DA neuronal damage is associated with DA receptor damage at either striatal level or pituitary level. In responding parkinsonian patients, basal PRL levels are normal, showing a normal response of pituitary DA receptor to pharmacological stimuli. 12 references.

002372 Anden, Nils-Erik; Grabowska-Anden, Maria. Dept. of Medical Pharmacology, Biomedicum, S-751 23 Uppsala, Sweden **Drug effects on pre- and postsynaptic dopamine receptors.** Advances in Biochemical Psychopharmacology. 24:57-64, 1980.

The effects of some neuroleptic drugs on presynaptic and postsynaptic dopamine (DA) receptor activity were investigated in rat corpus striatum following acute and chronic treatment. In acute experiments, sulpiride and metoclopramide differed in their effects on the DA receptors in the rat corpus striatum: postsynaptic and presynaptic DA receptors were preferentially blocked by sulpiride and metoclopramide, respectively. The enhanced response to apomorphine after withdrawal of chronic treatment with sulpiride indicates that a supersensitivity of postsynaptic DA receptors occurs and might be responsible for tardive dyskinesia. 21 references.

002373 Baldessarini, Ross J.; Tarsy, Daniel. Mailman Laboratories for Psychiatric Research, McLean Division of Massachusetts General Hospital, Belmont, MA 02178 **Pathophysiologic basis of tardive dyskinesia.** Advances in Biochemical Psychopharmacology. 24:451-455, 1980.

The pathophysiologic basis of tardive dyskinesia is reviewed, and implications for pharmacotherapy of psychiatric disorders are discussed. It is contended that the dopamine (DA) receptor supersensitivity hypothesis may help to explain some features of the pathophysiology of tardive dyskinesia, and is most likely to contribute to its more rapidly reversible forms, such as acute dyskinesias that follow abrupt withdrawal of neuroleptic drugs. Furthermore, the entertainment of this hypothesis has shed light on mechanisms only recently appreciated that evidently exert important regulatory effects on central synaptic function and that contribute to neuronal plasticity and adaptiveness in the CNS. Moreover, the hypothesis suggests new therapeutic strategies, such as the attempt to suppress supersensitive receptors by the restoration of agonist availability or through the induction of tolerance to agonists, as a way of moving beyond current attempts to suppress DA availability or function, which seem likely to aggravate the very condition being treated. 6 references.

002374 Barnes, T. R. E.; Kidger, T.; Trauer, T.; Taylor, P. Dept. of Psychiatry, New Addenbrooke's Hospital, Hills Road, Cambridge, England **Reclassification of the tardive dyskinesia syndrome.** Advances in Biochemical Psychopharmacology. 24:565-568, 1980.

An attempt at reclassification of the tardive dyskinesia (TD) syndrome using multivariate statistical methods is described. The 182 patients receiving chronic antipsychotic medication and 85 normal Ss were videotaped in a standard situation, and three clinicians were asked to record all apparently purposeless move-

ments at nine body sites. The composite scores for all 267 Ss were subjected to principal component analysis, and three separate symptom clusters emerged. It is suggested that the definition of TD currently employed may be overinclusive and thus tend to mask any correlation with individual symptoms or subsyndromes. This may partly account for failure to demonstrate consistent changes in response to drug interventions and failure to find significant correlations between TD and epidemiological factors or drug variables. 12 references.

002375 Barnes, Thomas R. E.; Bridges, Paul K. Bridges: Dept. of Psychiatry, Guy's Hospital Medical School, London SE1 9RT, England **Disturbed behaviour induced by high-dose antipsychotic drugs.** British Medical Journal. No. 6235:274-275, 1980.

Three cases of resistant schizophrenia patients who showed apparently paradoxical responses to high doses of antipsychotic drugs are considered. Relapses occurring with high drug use were atypical for the patients, being characterized by excitement, restlessness, and aggression. Possible explanations for the paradoxical responses are examined. 5 references.

002376 Bittencourt, P. R. M.; Gresty, M. A.; Richens, A. Clinical Pharmacology Unit, Institute of Neurology, National Hospital, Queen Square, London WC1N 3BG, England **Quantitative assessment of smooth-pursuit eye movements in healthy and epileptic subjects.** Journal of Neurology, Neurosurgery, and Psychiatry. 43(12):1119-1124, 1980.

A quantitative electrooculographic method was used to assess the impairment in smooth pursuit and vestibulo/ocular reflex suppression eye movements in 12 epileptic patients and eight normal volunteers. Both types of eye movement were impaired by 40% in the epileptic patients, and the impairment was at least partly due to the treatment with phenytoin and phenobarbitone. There was a strong positive correlation between the performances in vestibulo/ocular reflex suppression and smooth pursuit. 22 references. (Author abstract modified)

002377 Bjorndal, N.; Casey, D.; Gerlach, J. Dept. H, Sct. Hans Hospital, Roskilde, Denmark **Dopamine antagonist and agonist treatment of tardive dyskinesia.** Advances in Biochemical Psychopharmacology. 24:541-545, 1980.

Two new approaches to the treatment of tardive dyskinesia (TD) are described: studies with selective D2 dopamine (DA) receptor blockers oxiperomide and sulpiride; and studies with the DA agonist Madopar (L-DOPA benserazide). Results of the studies of the D2 DA blockers indicate that D2 DA blockers can reduce TD parkinsonism more than traditional combined D1 and D2 receptor blockers such as haloperidol and fluphenazine. Following withdrawal, however, the TD returned to pretreatment level, and in some cases became even more intensive. L-DOPA, having the ability to densensitize DA receptors, may decrease TD in otherwise drug-free patients, whereas no benefit is observed in neuroleptic treated patients. 10 references.

002378 Boning, Jobst. Universitats-Nervenklinik und Poliklinik Wurzburg, Fuchsleinstr. 15, D-8700 Wurzburg, West Germany **/Paradoxical akinesia induced by antidepressant drugs./** Paradoxe Akinesen unter Therapie mit Antidepressiva. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(6):336-341, 1980.

Evidence is presented that intermittent paroxysmal motor blockade manifestations, lasting seconds or minutes and mostly restricted to the lower limbs, are classifiable as paradoxical akinesias. Akinesias with different degrees of motor blockade under antidepressant therapy are described casuistically as mitigated motor perseveration tendencies, spontaneous blocks, and complete loss of muscle tonus. The akinetic psychomotor reaction patterns which are registered preferentially under the tricyclics of the imipramine series are generally observed only with long-term treatment. Anticipation and execution of psychomotor actions are related especially to dopaminergic neuronal connections in the nigrostriatal and mesolimbic system. Pharmacological interventions in the systems reveal complex interrelationships between motor movement anticipation and the processing of environmental stimuli. An attempt is made to assign the akinesias to a transition spectrum of cataleptic syndromes as a special form of drug-induced catalepsy. 27 references. (Journal abstract modified)

002379 Boucharlat, J.; Franco, A.; Carpentier, P.; Charignon, Y.; Denis, B.; Hommel, M. Service de Psychotherapie, Hopital Sud, C.H.U.R., F-38130 Echirolles, France **/Ergotism in a psychiatric environment associated with erythromycin dihydroergotamine propionate. An observation./** Ergotisme en milieu psychiatrique par association D.H.E. propionate d'erythromycine. A propos d'une observation. Annales Medico-Psychologiques. 138(3):292-296, 1980.

A case of ergotism associated with the use of erythromycin dihydroergotamine propionate (Propiocin) in psychiatric practice is discussed. The 18-year-old male subject, who had been treated with Propiocin for childhood psychosis, suffered leg and arm cramps followed by infection in these areas. All previous medication was stopped and the patient was administered glucose combined with 400mg of nafronyl and 500ml of dextran. Within 48 hours the clinical symptoms had disappeared completely. The S's psychiatric condition remained unchanged. 10 references.

002380 Branchey, Marc H.; Branchey, Laure B.; Bark, Nigel M.; Richardson, Mary Ann. Rockland Research Institute, Orangeburg, NY 10962 **Lecithin in the treatment of tardive dyskinesia.** Communications in Psychopharmacology. 3(5):303-307, 1979.

Eight chronic schizophrenic patients with tardive dyskinesia were treated with lecithin, which substantially increases serum choline levels. The severity of tardive dyskinesia, assessed by rating scales and by frequency counts of abnormal movements, was not significantly altered by lecithin. 12 references. (Author abstract modified)

002381 Bressler, Bernard. Medical Center, Box 3116, Durham, NC 27710 **An unusual side-effect of lithium.** Psychosomatics. 21(8):688-689, 1980.

A case is reported in which administration of lithium to treat depression led to a complete loss of the taste of salt with resulting massive salt ingestion. Under low sodium conditions, lithium clearance is reduced; however, the reverse may happen with increased sodium intake as was the case with the patient described in the report. The patient did not have an increased craving for salt, nor did she experience the metalic oral sensation that may be experienced with the intake of lithium. After the patient made a definite effort to decrease her salt intake, her blood lithium level reached therapeutic levels, and her improvement was striking. The mechanism which may have caused a complete loss of the taste of salt during the administration of lithium is discussed. 4 references.

002382 Brunner, Henri. Centre Hospitalier Specialise, F-67170 Brumath (Bas-Rhin), France **/Neuroleptic induced tardive dyskinesias./ Les dyskinesies tardives des neuroleptiques.** Psychologie Medicale. 12(12):2605-2612, 1980.

The neurologic syndrome induced by neuroleptics is described. The neurologic syndrome has four stages: early dyskinesia, akinetohypertonic parkinson stage, akathisia, and tardive

dyskinesia. The symptoms, causes, and diagnosis for tardive dyskinesia are described, and physiopathological and therapeutic problems are discussed. It is suggested that because of the apparent causative role neuroleptics play in tardive dyskinesia, they should only be prescribed for their primary indication, i.e., psychosis, and should not be used as tranquilizers.

002383 Burrows, Graham D.; Norman, Trevor R. Dept. of Psychiatry, Clinical Sciences Building, Royal Melbourne Hospital, Victoria 3050, Australia **Psychotherapeutic drugs: important adverse reactions and interactions.** Current Therapeutics. 21(10):33-41, 1980.

Adverse reactions and interactions of psychotherapeutic drugs are described for the four major classes of psychotherapeutic drugs. These are antidepressants, antimanic drugs, antianxiety agents, and antipsychotics. Tables listing common side-effects in patients receiving psychotherapeutic drugs, interacting drugs, clinical relevance of interactions, and the mechanism and effect of interactions are presented. The use of psychotropic drugs by pregnant and lactating women is not recommended. A greater likelihood of adverse drug interactions exists in the elderly since they are usually less healthy and receive multiple drug therapies. The side-effects and interactions of psychotropic drugs are of major clinical relevance. 15 references. (Author abstract modified)

002384 Calne, Donald B.; Eisler, Toomas; Gopinathan, Govindan; Williams, Adrian. Experimental Therapeutics Branch, NINCDS, NIH, Bethesda, MD **Progress in the pharmacotherapy of parkinsonism.** Advances in Biochemical Psychopharmacology. 23:237-243, 1980.

The pharmacotherapy of Parkinson's disease is discussed, with reference to levodopa, peripheral decarboxylase inhibitors (carbidopa and bensuride), monoamine oxidase type-B inhibitors (deprenyl), peripheral dopamine antagonists (domperidone), central dopamine antagonists (oxiperomide and tiapride), and dopamine agonists (ergot derivatives). The dopaminergic ergot derivatives (bromocriptine, lergotrile, lisuride, and pergolide) represent a new approach to the treatment of parkinsonism. A clinical study of 130 patients suggests that bromocriptine is indicated for alleviation of severe dyskinesia induced by levodopa and that the main adverse reaction to bromocriptine is induction of psychiatric symptoms (vivid dreams, confusion, hallucinations, or delusions). 25 references.

002385 Camp, Janet, A.; Winsberg, Bertrand G.; Goldstein, Stanley. Long Island Research Inst., Dept. of Psychiatry, Health Sciences Center, T-10, SUNY, Stony Brook, NY **Effects of imipramine on left ventricular performance in children.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 849-851).

The effects of imipramine on the cardiovascular activity of seven children receiving the tricyclic drug for treatment of severe behavior disorders were studied. Emphasis was on left ventricular (LV) performance, which was assessed noninvasively via systolic time intervals and echocardiograms. Doses ranged from 2.7 to 5.2mg/kg per day, and the results showed no significant change in LV measures between pretreatment and drug application for the group as a whole. There was evidence that LV performance may be compromised as imipramine plasma concentration rises, and data suggest that the drug is affecting the contractile state of the myocardium. However, when dosage does not exceed 5mg/kg per day, administered in three divided doses, the drug apparently does not adversely affect LV performance in children free from preexisting cardiac complications. 7 references.

002386 Casper, R. C.; Davis, J. M.; Garver, D. L.; Dekirmenjian, H.; Chang, S. Davis: Dept. of Psychiatry, Illinois State Psychiatric Institute, Chicago, IL **Phenothiazine plasma and red blood cell concentrations, their relationship to side effects and clinical efficacy.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 939-942)

Clinical studies were conducted on the side-effects and therapeutic response of acutely psychotic schizophrenics treated with phenothiazine butaperazine. Plasma level measurements of butaperazine did not show a consistent relationship to the drug's side-effects or clinical effects. The concentration in red blood cells was significantly related to the occurrence of dystonic reactions. In a pilot study and in a larger study, mean steady-state red cell butaperazine levels during the first 2 weeks of treatment significantly correlated with improvement in psychotic symptomatology in a nonlinear inverse parabolic pattern. With additional research, the superiority of steady-state red cell butaperazine levels, as a predictive function of side-effects or clinical effects over steady state plasma butaperazine concentrations, may become applicable to other antipsychotic agents. 8 references. (Author abstract modified)

002387 Chase, Thomas N.; Tamminga, Carol A. Experimental Therapeutics Branch, NINCDS, Bethesda, MD 20205 **Pharmacologic studies of tardive dyskinesia.** Advances in Biochemical Psychopharmacology. 24:457-461, 1980.

Clinical pharmacological studies of transmitter systems in extrapyramidal centers receiving dopaminergic inputs are reviewed in relation to their contributions to rational approaches to the prophylaxis or therapy for tardive dyskinesia. Despite the limited and sometimes conflicting results of these studies, certain patterns can be discerned. Motor improvement tends to accompany the administration of drugs which, by various means, block dopaminergic transmission, stimulate acetylcholine synthesis or inhibit its catabolism, or serve as GABA agonists. The implications of these observations in relation to the pathogenesis of tardive dyskinesia are noted. 18 references.

002388 Chevalier, J. F.; Ginestet, D. Centre Hospitalier de Versailles, 1, rue Richaud, F-78000 Versailles, France **/Iatrogenic depressions./** Les depressions iatrogenes. Encephale. 5(5, Suppl.):567-578, 1979.

The identification of iatrogenic depression is considered, and drugs such as the antihypertensives, oral contraceptives, appetite suppressants, and the neuroleptics which are believed to cause depression are discussed. Difficulties of identifying iatrogenic depression occur because of problems in detection of the depression and in linking convincingly the state of depression with the administration of a particular drug. The following observations from analysis of the literature provide contradictory evidence: the type and severity of depression are rarely specified; a history of psychiatric disorder is commonly stressed; the specific role of the disability caused by physical or mental illness and the need to use palliative rather than curative measures are usually underestimated; and it was found that the biochemical effects of some of these drugs upon the cerebral amines do not cause more depression of mood. It is suggested that if one considers how widely the drugs incriminated are used, it is clear that real drug-caused depression is rather uncommon. 34 references. (Journal abstract modified)

002389 Chevalier, J. F.; Renier, E.; Brion, S. Brion: Service de Neuropsychiatrie, Centre Hospitalier, F-78 Versailles, France / **Edemas and myoclonies in a patient with Parkinson's disease treated by amantadine: problem with associated medications./** Oedeme et myoclonies chez un parkinsonien traite par Manta-

dix: probleme des associations medicamenteuses. Encephale. 6(4):381-384, 1980.

A case of myoclony and edema in a patient with Parkinson's disease is discussed. The 64-year-old patient suffering from the disease (who had been treated with amantadine, orphenadrine, and Modopart and had demonstrated edema of the legs) was administered diuretics inducing the appearance of myoclonic jerks similar to those observed in a bismuth intoxication. The jerks remained after the diuretics were terminated and only disappeared with the suppression of amantadine. It is supposed that diuretics increased the intoxication by amantadine, probably by means of an increase of the reabsorption of basic drugs. The myoclony may have been caused by the central anticholinergic properties of amantadine. 6 references. (Journal abstract modified)

002390 Clow, A.; Jenner, P.; Theodorou, A.; Marsden, C. D. University Dept. of Neurology, Institute of Psychiatry, London SE5 8AF, England **Changes in cerebral dopamine metabolism and receptors during one-year neuroleptic administration and subsequent withdrawal: relevance to brain biochemistry in schizophrenia.** Advances in Biochemical Psychopharmacology. 24:53-55, 1980.

Changes in cerebral dopamine (DA) metabolism and receptors during one-year neuroleptic adminstration and subsequent withdrawal are discussed in relation to the dopamine hypothesis of the pathogenesis of schizophrenia. Changes in cerebral DA, homovanillic acid (HVA), 3,4-dihydroxyphenylacetic acid (DOPAC), and specific 3H-spiperone binding in corpus striatum and mesolimbic areas are described. Results suggest that most of the changes reported in the brains of patients with schizophrenia might be due to neuroleptic drug administration. The development of increased DA receptor density on chronic neuroleptic therapy provides a reasonable explanation for the appearance of tardive dyskinesia. 6 references.

002391 Craig, Thomas J.; Bracken, Joan. Information Sciences Division, Rockland Research Institute, Orangeburg, NY 10962 **Pneumonia and psychotropic drug use in elderly psychiatric patients.** Journal of the American Geriatrics Society. 28(12):550-552, 1980.

The use of psychotropic drugs among 30 elderly psychiatric patients with pneumonia (15 of whom died) was compared to the general elderly population of the hospital. A negative association between the use of psychotropic agents and the development of pneumonia was revealed. The factors of age, sex, preexisting illness, or organism virulence/patient resistance were all associated with death from pneumonia. However, the present findings do not support the hypothesis that psychotropic drugs are implicated in pneumonia deaths among elderly psychiatric patients. 16 references. (Author abstract modified)

002392 Crews, Eugene L. Dept. of Psychiatry, University of Alabama Medical Center, Birmingham, AL 35233 **Tardive dyskinesia: recognition, management, and prevention.** Alabama Journal of Medical Sciences. 17(2):165-168, 1980.

Techniques for diagnosing, managing, and preventing tardive dyskinesia in patients taking neuroleptic drugs are examined. This extrapyramidal movement disorder is characterized by abnormal, sterotyped, involuntary movements of the tongue, mouth, face, limbs, and trunk. Its etiology is hypothesized to result from dopamine receptor supersensitivity. When discontinuance of neuroleptics is not indicated, management can be achieved by pharmacological treatment to augment acetylcholine or GABA levels. Lithium treatment may also be effective. Physicians utilizing neuroleptics to treat patients should restrict long-term use to patients with schizophrenia or conditions such as Gilles de la Tourette's disorder. 25 references.

002393 Curtis, J. R. Charing Cross Hospital Medical School, London, England **Drug-induced disorders of the urinary tract.** British Journal of Hospital Medicine. 24(1):29-30, 33, 1980.

Drugs and their related symptoms implicated in disorders of the urinary tract are examined. There is evidence that metabolic activation of some drugs within the kidneys is responsible for nephrotoxicity while other drug reactions seem to be immunologically mediated. Certain drugs may produce their effects secondarily as a result of, for example, electrolyte disturbances, calculus formation, crystalluria, or induction of urinary neoplasms. Dexamphetamine and alpha-methyldopa have been implicated in retroperitoneal fibrosis. An acute hypercalcemic crisis may produce a variety of psychiatric syndromes together with abdominal pain, vomiting, constipation, and acute renal failure. It is recommended that renal function be monitored closely in all patients receiving lithium treatment. Psychotropic drugs are implicated also in inappropriate secretion of antidiuretic hormone. Finally, the kidneys may be involved in a variety of ways in heroin addicts. 23 references.

002394 Daisley, Roy W.; Gudka, Harsha V. Dept. of Pharmacy, Brighton Polytechnic, Moulsecoomb, Brighton, Sussex BN2 4GJ, England **Tyramine content of canned and packet soups.** Journal of Pharmacy and Pharmacology. 32(1):77, 1980.

Four types of canned or packaged soup were analyzed for tyramine and dopamine content, in light of reported possible adverse effects of soup consumption in patients treated with monoamine oxidase inhibitors. No tyramine or dopamine was detected. 3 references.

002395 Dany, F.; Bordes, M. M.; Dallocchio, M.; Albin, H.; Dangoumau, J.; Merle, L.; Charmes, J. P.; Brosset, P. Service de Cardiologie, Hopital Cardiologique, Av. de Magellan, F-33604 Pessac, France **/Side-effects of beta adrenergic blocking drugs: a methodological problem./** Effets indesirables des beta-bloquants: un probleme de methodologie. Therapie. 35(3):381-389, 1980.

To determine the best way of recognizing the frequency of side-effects from the beta adrenergic blocking drugs, and the potential risk of a new oculocutaneous mesenteric syndrome, four methods of collecting side-effect data are compared. It is suggested that the use of a checklist proves that certain signs predate the treatment, and that others could be attributed to the beta blocking drugs, but the method fails to recognize the physical signs. The habitual method, interrogation-oriented, overestimates the frequency of the troubles and can ignore signs of the practolol syndrome. The focal investigation is more sensitive but expensive and shows lacrymatory disease following beta blocking therapy. Pharmacovigilance provides a synthesis and an early diagnosis of medicinal toxicity. It is suggested that comparison by the four methods provides information about a drug's tolerance and possible side-effects. 28 references. (Journal abstract modified)

002396 Davidson, Sidney I. University of Liverpool, Liverpool, England **Drug-induced disorders of the eye.** British Journal of Hospital Medicine. 24(1):24-25, 27-28, 1980.

Drug-induced disorders of the eye, specifically of the cornea and conjunctiva, the lens, retina, optic nerve, and glaucoma are examined. Although the possible adverse effects of systemic drugs on the eye are of importance, it is remarked that adverse reactions can occur also with topical ocular therapy and these reactions may not be only local but also may result in serious systemic effects. Symptoms of disorders created by the administration of such drugs as the phenothiazines, antiparkinsonian agents, and other psychotropic drugs are considered. The most common drug-induced effect on the eye from systemic therapy

is blurring of vision. It is reported that this is due to an anticholinergic effect which leads to cycloplegia and also produces mild pupillary dilation. 29 references.

002397 Davis, Michael. King's College Hospital, London, England **Drug-induced disorders of the liver.** British Journal of Hospital Medicine. 24(1):17, 19, 21-23, 1980.

Drug-induced disorders of the liver are examined. Because of its central role in the metabolism of therapeutic agents, the liver is one of the principal targets of adverse drug reactions. The spectrum of hepatic reactions is broad, ranging from competitive interference with bilirubin uptake and excretion to parenchymal injury and neoplasia. The effect of antidepressants on diffuse hepatocellular damage, and the effects of methyldopa, chlorpromazine, synthetic androgens, and oral contraceptives are among those drugs and related reactions of the liver which are considered. 53 references

002398 Diepart, E.; Cottereau, M. J.; Deniker, P. Bosveldweg 33, B-1180 Brussels, Belgium **/Tardive dyskinesia from neuroleptic drugs: review of the literature./** Les dyskinesies tardives des neuroleptiques: revue de la litterature. Encephale. 5(4):317-337, 1979.

Tardive dyskinesia is discussed as one of the major extrapyramidal side-effects of neuroleptic drugs. Tardive effects are comprised mainly of buccolinguomasticatory dyskinesia, sometimes accompanied by other extrapyramidal symptoms, such as chorcoathetoid movements of the limbs. Tardive dyskinesia is reported most often in elderly subjects, when long-term neuroleptic treatment is withdrawn; it can also appear in young people, and after relatively short-term neuroleptic treatment. The disturbance occurs or is aggravated when neuroleptics are withdrawn and is reduced when dosage is increased; it responds to the theoretical model of denervation supersensitivity. Symptoms may be reduced by blocking the dopaminergic receptor, or by reducing dopaminergic transmission or increasing cholinergic activity. 87 references. (Journal abstract modified)

002399 Dominguez, Roberto A. Dept. of Psychiatry (D4-12), University of Miami School of Medicine, P.O. Box 016960, Miami, FL 33101 **Tardive dyskinesia following low doses of piperacetazine.** American Journal of Psychiatry. 137(12):1617-1618, 1980.

The case of a 65-year-old man with chronic schizophrenia who developed tardive dyskinesia following low doses of piperacetazine is reported. There was a rapid progression of dyskinetic symptoms while the patient received the drug and the gradual disappearance of symptoms once the drug was discontinued. Based on the recommended dose, the daily amount of medication that this patient received, 25 to 50mg/day, was relatively low. The orofacial movements had become so severe that dysarthria occurred. In this case, prompt discontinuation of the drug led to almost total symptomatic improvement of the patient's involuntary movements. 6 references.

002400 Engquist, A.; Chraemmer, Jorgensen B.; Andersen, H. B. Dept. of Anesthesiology, Herlev Hospital, DK-27 30 Herlev, Denmark **Epidural morphine-induced catatonia.** Lancet. No. 8201:984, 1980.

Complications in the use of epidural morphine in the case of a 43-year-old male with bronchogenic carcinoma and metastases to the thoracic spine are reported. Complications involved visual hallucinations, catatonia, and rigidity and spasticity of all extremities. Babinski's reflex was present bilaterally and miosis was pronounced. Narcolepsy was present since the patient did not respond to verbal contact. Morphine intoxication was suspected. After a total dose of 0.66mg of naloxone intravenously during the following hour all neurological abnormalities disappeared.

002401 Fahn, Stanley; Cote, Lucien J.; Barrett, Robert E.; Snider, Stuart R. Dept. of Neurology, Columbia University College of Physicians and Surgeons, New York, NY 10032 **Further experiences with low doses of bromocriptine in Parkinson's disease.** Advances in Biochemical Psychopharmacology. 23:255-260, 1980.

A followup study of patients given bromocriptine in addition to levodopa/carbidopa for the treatment of Parkinson's disease is described. A general tendency for patients on bromocriptine to develop adverse effects or loss of efficacy with time was observed. Relatively few patients showed sustained benefit from bromocriptine and the degree of benefit was generally mild. Adverse effects were noted in 70% of patients given bromocriptine; these included confusion, hallucinations, psychotic behavior, nausea, vomiting, and abnormal involuntary movements. 5 references.

002402 Figueroa, A. Martinez; Johnson, R. H.; Lambie, D. G.; Shakir, R. A. Johnson: Willington Clinical School of Medicine, Wellington Hospital, Wellington 2, New Zealand **The role of folate deficiency in the development of peripheral neuropathy caused by anticonvulsants.** Journal of the Neurological Sciences. 48(3):315-323, 1980.

To investigate the role of folate deficiency in neuropathy caused by anticonvulsants, electrophysiological studies of peripheral nerve function were carried out on 29 epileptic patients on long-term anticonvulsant therapy. All but three patients showed abnormalities in one or more electrophysiological measures, the main abnormality being in amplitude of sensory nerve action potential--this was reduced or absent in 76% of patients. All patients had low concentrations of folate in serum and CSF, these being below the normal ranges in 19 patients treated with folate, either 5-formyltetrahydrofolate or folic acid, over a period of one month. Folate therapy significantly reversed abnormalities in motor and sensory nerve distal latencies; the effect was greater with 5-formyltetrahydrofolate, apparently because this produced higher CSF folate concentrations than folic acid. It is concluded that folate deficiency may be involved in the development of peripheral neuropathy due to anticonvulsants. 16 references. (Author abstract modified)

002403 Gardos, George. Medical Office Building, Cardinal Cushing General Hospital, 830 Oak St., Brockton, MA 02401 **Disinhibition of behavior by antianxiety drugs.** Psychosomatics. 21(12):1025-1026, 1980.

A case report is presented which gives strong evidence that diazepam led in a dose-dependent fashion to a marked increase in sexual and hostile aggressive fantasies, a highly disturbing fear of losing control, and, on several occasions, to verbally abusive and self-destructive behavior. It is noted that factors in the situation probably contributed to the patient's behavior. The intensity of the acting-out is attributed to an interaction of diazepam-induced release of hostility with the stress of the therapist's absence. Ongoing treatment with imipramine probably did not directly influence the diazepam effects. It is recommended that clinicians be aware that curbing or eliminating adverse behavioral effects of chlordiazepoxide and diazepam would result not from more tranquilization but from dose reduction or drug discontinuation. 6 references.

002404 Gardos, George; Samu, Istvan; Kallos, Maria; Cole, Jonathan O. Boston State Hospital, IRR-323. 591 Morton St., Boston, MA 02124 **Absence of severe tardive dyskinesia in Hungarian schizophrenic out-patients.** Psychopharmacology. 71(1):29-34, 1980.

One hundred and twenty-two patients comprising 82% of the nonhospitalized schizophrenic population of a Hungarian town were rated for tardive dyskinesia (TD). Drug histories were also obtained. No severe cases of TD were found. The markedly lower prevalence of TD in the study population in contrast to similar North American samples may be related to differences in treatment styles, in particular the use of electroshock therapy in place of high dose neuroleptic therapy, and extensive exposure to ethopropazine, promethazine, and other antiparkinson drugs. Twenty patients revealed clinically evident fine tremors, mostly of the tongue and eyelid. Multivariate analysis revealed a positive association of choreiform dyskinesia with duration of low potency neuroleptic treatment. 15 references. (Author abstract modified)

002405 Gerlach, Jes; Casey, Daniel E. Sct. Hans Hospital, Departement H, DK-4000 Roskilde, Denmark **/Tardive hyperkinesia. Effects of sulpiride and GABA system agonists./** Hyperkinesies tardives. Effets du sulpiride et des agonistes du systeme GABA. Psychologie Medicale. 12(12):2591-2596, 1980.

Tardive hyperkinesia as caused by long-term neuroleptic use and the effect of various drugs on this condition are discussed. Reversible tardive hyperkinesia seems to depend on a primary reduced dopamine neurotransmission, a related secondary dopamine overactivity, and possible other neurotransmitter dysfunctions. Sulpiride markedly reduces tardive hyperkinesia and induces only minimal parkinsonism, but whether this is true in long-term treatment has not yet been determined. GABA agonists have an inconsistent effect on tardive hyperkinesia and may accentuate parkinsonism and antihyperkinetic effects of antidopamine substances. They also produce side-effects which counterindicate their use in the treatment of tardive hyperkinesia. 31 references. (Journal abstract modified)

002406 Godwin-Austen, Richard B. Dept. of Neurology, Derbyshire Royal Infirmary, Nottingham, England **Levodopa compared with bromocriptine in the treatment of Parkinson's disease.** Advances in Biochemical Psychopharmacology. 23:261-265, 1980.

A group of 24 patients with Parkinson's disease were treated with levodopa, bromocriptine, or a combination of the two drugs. Therapeutic responses to the two drugs were similar but some patients showed a better response to one drug or the other. Patients that did not respond to levodopa did not respond to bromocriptine. The adverse effects of the two drugs were also similar, but psychotic confusional states were sometimes more severe, less predictable, and longer lasting with bromocriptine. Combined teatment with levodopa and bromocriptine appeared to be most useful in patients with

002407 Goetz, Christopher G.; Dysken, Maurice W.; Klawans, Harold L. Dysken: Illinois State Psychiatric Institute, 1601 West Taylor, Chicago, IL 60612 **Case 3: Assessment and treatment of drug-induced tremor.** Journal of Clinical Psychiatry. 41(9):310-315, 1980.

The case history of an elderly woman admitted to a hospital for psychiatric examination after she refused to acknowledge her husband's death is described. After admission the woman developed a new and prominent tremor which occurred coincident with the induction of neuroleptic drug therapy and resolved coincident with its cessation. Two methods are described for evaluating the patient: descriptive, through the differential diagnosis of the tremor, and historical, through the diagnosis of neuroleptic-related disorder. It is suggested that familiarity with both methods provides the clinician with the plasticity to integrate observation and pharmacology with an understanding of the pathophysiology of movement disorders. 27 references.

002408 Goldman, Larry S.; Hudson, James I.; Weddington, William W., Jr. Weddington: Box 411, University of Chicago, 950 E. 59th St., Chicago, IL 60637 **Lupus-like illness associated with chlorpromazine.** American Journal of Psychiatry. 137(12):1613-1614, 1980.

The second documented case of a chlorpromazine-associated, lupus-like illness that manifested iteself with dyspnea and bilateral pleural effusions is reported. The patient who is described was receiving chronic chlorpromazine therapy and developed dyspnea, low-grade fever, bilateral pleural effusions, immunological abnormalities, elevated antinuclear antibody titer, and polyserositis suggestive of a lupus-like syndrome. Chlorpromazine and other psychotropic medications may induce immunological abnormalities and a lupus-like syndrome. It is important to be familiar with this possibly life-threatening iatrogenic syndrome because the process is reversible when the drug is discontinued. In the reported case, the patient's abnormal X ray and laboratory findings reversed after the chlorpromazine was discontinued. 10 references.

002409 Gualtieri, C. T.; Rojahn, J.; Staye, J. Biological Sciences Research Center, University of North Carolina, Chapel Hill, NC 27514 **The influence of neuroleptic drugs on prolactin secretion in children.** Developmental Medicine and Child Neurology. 22(4):515-518, 1980.

The influence of neuroleptic drugs on prolactin secretion in children is discussed, and the overuse and misuse of neuroleptics in developmentally handicapped children is described. It is noted that hyperprolactinemia is a well-recognized side-effect of neuroleptic treatment in adults, but that the neuroendocrine response of children on neuroleptics has not been studied. Prolactin levels in 12 children treated with four different neuroleptic drugs (thioridazine, chlorpromazine, haloperidol, trifluoperazine). In every one of the 12 children, neuroleptic drugs in low to medium doses produced striking increases in serum prolactin levels to between two and 15 times nondrug levels. No consistent changes in growth hormone and thyrotropin were noted. 29 references.

002410 Guram, Malkiat S.; Gill, Tarlok S.; Geber, William F. Biology Dept., Division of Natural Science, Voorhees College, Denmark, SC 29042 **Teratogenicity of imipramine and amitriptyline in fetal hamsters.** Research Communications in Psychology, Psychiatry and Behavior. 5(3):275-282, 1980.

In a teratogenic study, timed pregnant hamsters were administered a single intraperitoneal injection of either imipramine or amitriptyline on day 8 of gestation. A dose-response relationship was studied by injecting imipramine in a dose range of 35 to 110 mg/kg, and amitriptyline in a dose range of 60 to 100mg/kg. On day 12 of gestation, the fetal response to the injection of the various dose levels of each antidepressant was determined by maternal sacrifice and observation of the number of grossly abnormal fetuses. Imipramine produced 2.9% to 19.5%, and amitriptyline 6.4% to 44.8% malformed fetuses. Both compounds induced essentially the same types of gross external fetal anomalies including exencephaly, cranioschisis, lower body atrophy, abnormal spinal contour, omphalocele, and runts. 9 references. (Author abstract)

002411 Hausen, Arthur Charles. University of Southern California **Adverse reactions to medications prescribed for hyperkinesis. (Ph.D. dissertation).** Dissertation Abstracts International. 41(4):1532-A, 1980. (Not available from Univ. Microfilms), 1980.

The adverse side-effects of drugs encountered in the treatment of hyperkinesia are reviewed. Seventeen medications comprising those most frequently prescribed were researched. Drug monographs are presented which correlate dosage regimes with

adverse drug responses and establish a basis for the exercise of vigilance corresponding to the degree of toxicity associated with the drug. The modes in which each adverse reaction manifests itself in terms of incidence, latency, duration, magnitude, and interval of occurrence are enumerated. These factors are correlated to the type, amount, frequency, and temporal aspects of administration. Age, sex, environmental milieu, and disposition of the child are also examined as they relate to psychopharmacological side-effects. (Journal modified)

002412 Hug, Robert. F.R.H., 67-77, boulevard Pasteur, F-94260 Fresnes, France **/Comparative study of variations in prolactin levels during treatment with antipsychotic drugs./** Evolution comparee des taux de prolactine au cours des traitements antipsychotiques. Psychologie Medicale. 12(12):2585-2589, 1980.

Results of a study comparing variations in prolactin levels during treatment with antipsychotic drugs are reported. The physiology of prolactin is briefly outlined, and background literature on hyperprolactinemia induced by the different neuroleptic classes are reviewed. Two studies were undertaken: the first was to document prolactin response to sultopride compared to haloperidol; the second was to establish prolactin levels in chronic mental patients who had received long-term treatment with neuroleptics. Preliminary results show that sultopride induces a rapid rise in prolactin levels. For the second experiment, results show that no matter what neuroleptic was taken orally, prolactin levels decrease regularly over time and become low or even subnormal. (Journal abstract modified)

002413 Jaffe, Jerome H.; Kanzler, Maureen; Green, Judith. Dept. of Biological Psychiatry, New York State Psychiatric Institute, 722 West 168th St., New York, NY 10032 **Abuse potential of loperamide.** Clinical Pharmacology and Therapeutics. 28(6):812-819, 1980.

The abuse potential of loperamide was studied in adult male Ss with a history of illicit drug use. Loperamide (60mg) induced a detectable subjective effect in more than half the Ss, but was not liked by the Ss and was identified as codeine. Results indicate that the abuse potential of loperamide is slight. 9 references. (Author abstract modified)

002414 Jose, C. J.; Evenson, Richard C. VA Medical Center, Jefferson Barracks Division, St. Louis, MO 63125 **Antecedents of self-induced water intoxication: a preliminary report.** Journal of Nervous and Mental Disease. 168(8):498-500, 1980.

The characteristics of the patient population at-risk for self-induced water intoxication were examined with data from 13 patients who had 21 episodes of the malady. All of the patients were receiving various psychotropic drugs for some years prior to their water intoxication. No particular drug could be singled out in relation to water intoxication. The mechanism by which psychotropic medications alter antidiuretic hormone secretion is not clear. The role of psychosis, psychotropic drugs, electroconvulsive therapy, and the possible predilection of Caucasians, should be tested in a larger patient population before any conclusions can be drawn. 10 references.

002415 Joyce, Roby P.; Gunderson, Carl H. Neurology Service, Brooke Army Medical Center, Fort Sam Houston, TX 78234 **Carbamazepine-induced orofacial dyskinesia.** Neurology. 30(12):1333-1334, 1980.

A case report of a 51-year-old man diagnosed as having idiopathic generalized seizures who suffered a dose-related lingual/facial/buccal extrapyramidal reaction in association with carbamazepine intoxication, is presented. It is noted that the only anticonvulsants previously reported to cause orofacial dyskinesia were phenytoin and primidone at toxic levels. The dyskinesia was dose-related rather than idiosyncratic, since the dyskinesia ceased at a lower carbamazepine blood level. 10 references.

002416 Kammerer, F.; Villeneuve, A. 2, place St-Thomas, F-67000 Strasbourg, France **/Lithium and renal function./** Lithium et fonction renale. Encephale. 6(3):227-240, 1980.

The literature on the effect of lithium on renal function is reviewed, and the mechanisms involved in the concentration and elimination of lithium by this organ are discussed. Urinary modifications in ionic exchanges and concentration capacity induced by this metal are also treated. It is emphasized that diuretics should be used with caution with lithium and the various reports on the eventual nephrotoxicity of this agent must be considered. Although it is concluded that there is no absolute proof of renal toxicity, it is suggested that lithium intoxication and lithium-induced insipid diabetes should be treated as risk factors of renal insufficiency. Monitoring of renal function before and during treatment with this drug is necessary. 65 references. (Journal abstract modified)

002417 Kane, John; Wegner, James; Stenzler, Steven; Ramsey, Patricia. Long Island Jewish-Hillside Medical Center, Glen Oaks, NY 11004 **The prevalence of presumed tardive dyskinesia in psychiatric inpatients and outpatients.** Psychopharmacology. 69(3):247-251, 1980.

The prevalence of presumed tardive dyskinesia in psychiatric inpatients and outpatients was measured, using raters blind to the patient's diagnosis and drug history. Randomly-selected psychiatric patients (n=271) were examined by raters blind to diagnosis and treatment history for the presence of abnormal movements. The prevalence of presumed tardive dyskinesia among neuroleptic exposed patients was 4.6%. If minimal rating scale criteria were applied, 9% of those patients with no history of neuroleptic exposure might have been given presumptive diagnoses of dyskinesia. Problems in establishing diagnostic criteria are discussed and a longtudinal approach toward validating diagnoses is recommended. 10 references. (Author abstract modified)

002418 Kashani, Javad H.; Hodges, Kay K.; Shekim, Walid O. 803 Stadium Rd., Columbia, MO 65201 **Hypomanic reaction to amitriptyline in a depressed child.** Psychosomatics. 21(10):867, 872, 1980.

The case history of a child who may have suffered a hypomanic reaction to amitriptyline during a double-blind cross-over design study is reported. The child was an inpatient on the child psychiatry service because of depression. While taking the second and anger, paced excessively, was openly defiant, belligerent, hostile, and argumentative, speaking constantly in a loud voice, with pressure of speech. When the child became impossible to manage the dosage of the unknown medication was reduced, and after 48 hours the hypomanic reaction disappeared and the child's behavior continued to improve dramatically. When the code was unlocked, the was found to be amitriptyline. It is suggested that the child may in fact be a bipolar patient who sustained his first episode of hypomania at an unusually young age. A close followup is planned. 7 references.

002419 Kaskey, Gary B.; Salzman, Leonard F.; Ciccone, J. Richard; Klorman, Rafael. Salzman: Dept. of Psychiatry, University of Rochester, School of Medicine and Dentistry, 300 Crittenden Blvd., Rochester, NY 14642 **Effects of lithium on evoked potentials and performance during sustained attention.** Psychiatry Research. 3(3):281-289, 1980.

Two versions of the continuous performance test (CPT) differing in complexity were administered to 15 patients with bipolar affective disorder, manic type, before and after lithium treat-

ment. Lithium decreased errors of commission on both CPT tasks, although the difference was significant only for the simpler task. Reaction time was significantly increased by lithium on the more difficult CPT task. The data are consistent with an attention enhancing effect of lithium, coupled with a general reduction in the tendency to respond to stimuli. 23 references. (Author abstract modified)

002420 Kerry, R. J.; Ludlow, J. M.; Owen, G. Northern General Hospital, Sheffield, England **Diuretics are dangerous with lithium.** British Medical Journal. No. 6236:371, 1980.

Two cases that illustrate the dangers of uncontrolled prescribing of diuretics to patients already receiving lithium are presented. In both cases toxic serum lithium concentrations occurred, which led to lithium being stopped. Both patients relapsed into mania and had to be admitted to the hospital. It is suggested that although diuretics may occasionally be combined with lithium, the serum lithium concentration should initially be estimated daily, and close biochemical and clinical supervision during the first month of treatment is deemed essential. 5 references.

002421 Kidger, T.; Barnes, T. R. E.; Trauer, T.; Taylor, P. J. St. Andrew's Hospital, Northampton, NN1 5DG England **Subsyndromes of tardive dyskinesia.** Psychological Medicine. 10(3):513-520, 1980.

A reliable method for recording the site and duration of purposeless movements was devised and tested with 267 Ss, 182 of whom had been exposed to neuroleptics. The results were submitted to a principal components analysis and three movement dimensions emerged. One group of movements resembled a parkinsonian syndrome. The other two groups of movements both conformed to the generally accepted criteria for tardive dyskinesia. These groups were: head and neck movements and trunk and limb movements. The possibility of the second and third groups representing clinically relevant subsyndromes of tardive dyskinesia is discussed. 20 references. (Author abstract modified)

002422 Kingsley, E.; Tweedale, R.; Tolman, K. G. Tolman: University Medical Center, 50 North Medical Drive, Salt Lake City, UT 84132 **Hepatotoxicity of sodium valproate and other anticonvulsants in rat hepatocyte cultures.** Epilepsia. 21(6):699-704, 1980.

Rat hepatocyte cultures were used to test the hepatotoxicity of valproic acid, recently shown to be associated with liver disease in man. Dose-related hepatotoxicity was demonstrated for valproic acid at concentrations ranging from 10 to 320 microgram/ml, therapeutic concentrations being 50 to 100 microgam/ml. Hepatotoxicity could not be demonstrated for phenobarbital, phenytoin, primidone, and clonazepam. It is concluded that valproic acid is a dose-related hepatotoxin. 35 references. (Author abstract)

002423 Kirk, Lars; Jorgensen, Aksel. Jorgensen: Biochemical Dept., H. Lundbeck and Co. A/S, DK-2500 Valby-Copenhagen, Denmark **Concentrations of Cis(Z)-flupentixol in maternal serum, amniotic fluid, umbilical cord serum, and milk.** Psychopharmacology. 72(1):107-108, 1980.

Concentrations of the neuroleptic Cis(Z)-flupentixol in maternal serum, amniotic fluid, umbilical cord serum, and milk were assessed by radioimmunoassay. A venous blood sample and an umbilical cord blood sample were obtained from five young women treated with the neuroleptic drug, at the time of giving birth. In two cases, amniotic fluid was also obtained, and from three of the mothers milk and simultaneous blood samples were obtained in the lactation period. It was found that the concentration of the active drug in umbilical cord serum (fetal serum) was lower than that in serum from the mother. Thus, the amounts of drug reaching the fetus are low, but they cannot be considered unimportant. The concentrations found in milk were about 30% higher than the serum concentrations. However, the amounts of drug administered to the neonate with the milk are very low and unless the neonate differs considerably from the adult as to sensitivity to or metabolism of this particular drug, they are of no importance. 3 references. (Author abstract modified)

002424 Kirkegaard, Aage; Jensen, A. County Hospital, DK-4500 Nykobing Sjaelland, Denmark **An investigation of some side-effects in 47 psychotic patients during treatment with clozapine and discontinuing of the treatment.** Arzneimittel-Forschung. 29(5):851-858, 1979.

Side-effects of clozapine, administered to 47 psychotic patients, were investigated during clozapine treatment, during decreasing dosage treatment, and following withdrawal from clozapine tratment. Results from examination of sedimentation rate, hemoglobin content, leukocyte count, alpha-amylase, creatinine, and bilirubin indicate that clozapine has no deleterious effect on these blood factors. No cases of leucopenia or agranulocytosis were observed. Moderately elevated values of the following liver parameters were found in some patients: lactic dehydrogenase, basic phosphatase, alanine aminotransferase, aspartic aminotransferase, and gamma-glutamyl transferase. No patients exhibited manifest symptoms of jaundice or bilirubinemia. No unequivocal relationship between elevated liver parameters and duration of treatment or magnitude of clozapine dosage was found, although this relationship was suggested in some patients. One year after the conclusion of clozapine treatment, elevated values were observed in only two patients, both of whom had abnormally high liver parameters before commencement of treatment. 10 references. (Author abstract modified)

002425 Kopera, Hans; Klein, Werner; Schenk, Hans. Dept. of Experimental and Clinical Pharmacology, University of Graz, Universitatspl. 4, A-8010 Graz, Austria **Psychotropic drugs and the heart: clinical implications.** Progress in Neuro-Psychopharmacology. 4(4/5):527-535, 1980.

Clinical implications of the unpredictable cariotoxic effects of neuroleptics and tricyclic antidepressants are discussed, and the relative safety of antidepressant doses of mianserin is described. Studies are reviewed which support the claim that tricyclic antidepressants can impair myocardial function. Antidepressant doses of mianserin: 1) do not affect cardiac function of patients with preexistent cardiac disease; 2) have no untoward effect on myocardial contractility and other cardiac functions in healthy Ss; and 3) possibly improve cardiac performance by increasing ejection friction. 30 references. (Author abstract modified)

002426 Kristjansen, Palle. Sct. Hans Hospital, Roskilde, Denmark **Approaches to the problem of preventing hazards of long-term neuroleptic treatment and of avoiding unnecessary drugs.** Advances in Biochemical Psychopharmacology. 24:505-511, 1980.

Approaches to the problem of preventing the hazards of long-term neuroleptic treatment and of avoiding unnecessary drugs are reviewed. The practical and ethical aspects of the choice between overmedication with concomitant risk of tardive dyskinesias and undermedication with concomitant risk of relapse are discussed, and attempts to predict good and poor drug responders are evaluated. It is concluded that high dose treatment with potent neuroleptics should be reserved for acutely disturbed patients in short periods. At the moment, there is no way of preventing the hazards of long-term neuroleptic treatment other than carefully monitoring the drug administration, reducing dosage, and introducing drug holidays. 39 references.

002427 Lahmeyer, Henry W.; Gaviria, Moises. Dept. of Psychiatry, University of Illinois, P.O., Box 6998, Chicago, IL 60680 **Bradycardia, persistent diabetes insipidus, and tardive dyskinesia with lithium intoxication.** Psychiatric Journal of the University of Ottawa. 5(4):283-286, 1980.

The case history of a lithium toxic patient with renal, cardiac, and central nervous system toxicity is presented. This 56-year-old female patient had been maintained on prophylactic lithium intermittently for 5 years, and during this time she had three episodes of mania and one episode of depression. For the next 3 years, she was maintained continuously on lithium. She developed a paranoid psychosis and haloperidol was added. Lack of improvement led to hospitalization. While hospitalized she developed severe bradycardia, tardive dyskinesia, and persistent diabetes insipidus. Preexisting dysfunction in the central nervous system, cardiovascular or renal system seems to predispose patients to severe toxicities in those systems and probably to toxicity in general. 24 references. (Author abstract modified)

002428 LaWall, John S. 1501 North Campbell Avenue, Tucson, AZ 85724 **Treatment of psychotropic-caused orthostatic hypotension.** Psychosomatics. 21(8):693-694, 1980.

Two cases are presented which illustrate problems of serious orthostatic hypotension and its treatment. Orthostatic hypotension is a side-effect of most of the antipsychotic and antidepressant agents, most notably the tricyclic antidepressants. The treatment measures recommended included: maintenance of adequate fluid, sodium, and potassium intake; use of elastic stockings such as those used in the prevention of phlebothrombosis; and the maintenance of adequate muscular tone in the lower extremities through walking and other activity. The head of the patient's bed can be elevated from six to eight inches to maintain peripheral vascular tone in a more or less steady state in the lower extremities. In most cases these measures can be used without interrupting chemotherapy of the patient's underlying psychiatric disorder. 4 references.

002429 Lemberger, Louis; Crabtree, Ross E. Lilly Laboratory for Clinical Research, Wishard Memorial Hospital, Indianapolis, IN 46202 **Neuropharmacology of synthetic ergot derivatives in man.** Advances in Biochemical Psychopharmacology. 23:117-124, 1980.

The neuropharmacologic actions of clinically-useful synthetic ergot derivatives are reviewed. The ergot derivatives act as postsynaptic dopamine receptor agonists and as alpha-adrenergic receptor antagonists. Pergolide and lergotrile lower prolactin levels via agonistic effects in the dopaminergic tuberoinfundibular system and may cause nausea and vomiting via excessive dopaminergic stimulation at the chemoreceptor trigger zone. The postural hypotension and nasal stuffiness produced by these compounds may be related to their effects on the peripheral vascular system. The drugs produce dilation of blood vessels and reduce blood pressure by blocking alpha-receptors. 15 references.

002430 Lemperiere, T.; Vagogne, L. Hopital Louis Mourier, F-92700 Colombes, France **/Malignant hyperthermic syndromes in the course of treatment with long-acting neuroleptics./** Les syndromes hyperthermiques malins au cours des cures par neuroleptiques a action prolongee. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1095-1100).

The appearance of malignant hypothermia in cases treated with long-acting neuroleptics is discussed. The rarity of the disease is explained as a result of misdiagnosis, usually as tetanus or respiratory encephalopathy. This may explain the high rate of mortality (50%) due to the illness. Following a psychiatric and neurological plan the use of neuroleptics can be managed successfully. 18 references. (Author abstract modified)

002431 Libiger, Jan; Ban, Thomas A. Ban: Dept. of Psychiatry, Tennessee Neuropsychiatric Institute, 1501 Murfreesboro Road, Nashville, TN 37217 **Drug induced dementia.** Progress in Neuro-Psychopharmacology. 4(6):561-567, 1980.

Pharmacological agents that are able to induce dementia are discussed, with special reference to anticonvulsants, anxiolytic sedatives, antineoplastic drugs, and various metals. The possible role of cholinergic mechanisms, tetrahydrofolate deficiency, and aluminum in the development of dementia is considered. 48 references. (Author abstract modified)

002432 Mackay, Angus V. P.; Sheppard, Graham P.; Saha, Bimal K.; Motley, Brenda; Johnson, Anthony L.; Marsden, C. David. MRC Neurochemical Pharmacology Unit, Dept. of Pharmacology, Medical School, Hills Road, Cambridge CB2 2QD, England **Failure of lithium treatment in established tardive dyskinesia.** Psychological Medicine. 10(3):583-587, 1980.

The effect of lithium carbonate treatment in established tardive dyskinesia (TD) was studied in a double-blind crossover study with 11 chronic inpatients. The extent and severity of TD were rated under standard conditions at approximately the same time of day, using the abbreviated Rockland Tardive Dyskinesia Rating Scale (Simpson et al., 1979). Changes in the total scores of the Rockland TD rating scale, its subtotal for facial and oral movements, the extrapyramidal rating scale, the Brief Psychiatric Rating Scale, and the NOSIE Scale were calculated. No significant effect of lithium on either TD or blood prolactin concentrations was demonstrated, but five patients developed pseudo-parkinsonian features. 25 references. (Author abstract modified)

002433 Maguire, G. P.; Tait, A.; Brooke, M.; Thomas, C.; Howat, J. M. T.; Sellwood, R. A.; Bush, H. University Department of Psychiatry, Withington and Christie Hospitals, Manchester 20, England **Psychiatric morbidity and physical toxicity associated with adjuvant chemotherapy after mastectomy.** British Medical Journal. No.6249:1179-1180, 1980.

The psychiatric morbidity in women who had mastectomies and were treated with cyclophosphamide, methotrexate, and 5-fluorouracil (CMF) was compared with that found in patients given melphalan or no further treatment. The relation between this morbidity and physical toxicity was also examined. Psychiatric morbidity was evaluated using the present state examinations shortly after surgery and 3 months and 12 to 18 months later. A high incidence of psychiatric morbidity was found in patients given CMF, and it is suggested that this outcome is linked to physical toxicity. 4 references.

002434 Marco-Granel, Francisco. Servicios de Psiquiatria e Higiene Mental, Valencia, Spain **/Lithium: problems of application, tolerance, and efficacy./** Litio. Problemas de instauracion, tolerancia y eficacia. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1105-1110).

Problems concerning the prescription, tolerance and efficacy of lithium are discussed. The examination of three case studies (neurosis and depression) reveals an intolerance to lithium related with secondary effects in the neurological area: tremors, ataxia, personality destruction and an underlying deficit in cerebral circulation; these side-effects cannot be compensated for with any therapy. Therefore, the therapist questions the mechanism of metabolic and biochemical interference at the neuronal level and its consequences for the patient. 10 references. (Author abstract modified)

002435 Mastaglia, F. L. Queen Elizabeth II Medical Centre, University of Western Australia, Perth, Australia **Drug-induced disorders of muscle.** British Journal of Hospital Medicine. 24(1):8, 11-14, 16, 1980.

Drug-induced disorders of muscle are investigated and full documentation of patients who develop muscular symptoms while on drug therapy is recommended. The possibility of drug-induced disorder should be considered in any patient who develops muscular symptoms during the course of drug therapy. Early diagnosis is essential in all forms of drug-induced neuromuscular disorder to ensure a prompt and complete recovery when the drug is withdrawn. The possibility of adverse effects of drugs on muscle function should be particularly kept in mind in patients who already have a myopathy, a peripheral neuropathy, or myasthenia because they may be more susceptible to toxic drug effects and are less able to compensate for such effects on muscle function. Beta-adrenergic blockers, barbiturates, diazepam, and propranolol are among those drugs whose effects on the muscular system are considered. 51 references.

002436 Mitchell, Elizabeth; Matthews, Kenneth Lee. Dept. of Psychiatry, University of Texas Health Science Center at San Antonio, 2135 Babcock Rd., San Antonio, TX 78229 **Gilles de la Tourette's disorder associated with pemoline.** American Journal of Psychiatry. 137(12):1618-1619, 1980.

The case of a 10-year-old boy who was being treated with pemoline for hyperactivity and who developed tic-like movements during that treatment is reported. It is suggested that the administration of pemoline may have precipitated the development of Tourette's disorder or that the boy's tic-like movements were a side-effect of pemoline. It is unknown what part previous treatment with thioridazine may have played in the development of the movement disorder. The tic described in this case more closely resembles Tourette's disorder than it does tardive dyskinesia, but an association among Tourette's disorder, tardive dyskinesia, and Huntington's chorea has been suggested previously. Further study is recommended to elucidate the relationship between dopamine and movement disorder. 5 references.

002437 Mizrahi, Eli M.; Holtzman, David; Tharp, Barry. Holtzman: Division of Pediatric Neurology, Stanford University School of Medicine, Stanford, CA 94305 **Haloperidol-induced tardive dyskinesia in a child with Gilles de la Tourette's disease.** Archives of Neurology. 37(12):780, 1980.

A case of haloperidol-induced tardive dyskinesia in a child with Gilles de la Tourette's disease is reported. A 7-year-old boy with multiple-tics or Gilles de la Tourette's disease was treated with haloperidol. Within five months, lingual/buccal/facial movements developed that were characteristic of tardive dyskinesia. This new movement disorder disappeared after treatment with haloperidol was stopped. It is noted that this is the first report of tardive dyskinesia complicating the use of haloperidol in the treatment of multiple tic syndrome in a child. 8 references. (Author abstract modified)

002438 Mollhoff, G.; Schmidt, G.; Bosche, J. Inst. Rechtsmed., Univ., Heidelberg, West Germany **/The neurological forensic aspects of thalium poisoning./** rechtsmedizinische Aspekte. Archiv fur Kriminologie. 163:1-13, 1979.

Medical and legal aspects of thalium poisoning are discussed. Thalium preparations are easily obtainable as mouse and rat poisons. Despite their bright colors, they are often used in suicide and murder because they have no odor or taste. Their presence in the body can be determined, although harmless traces should be distinguished from toxic doses. The symptoms of thalium poisoning are presented in their medical, chemical, and forensic aspects. (Journal abstract modified)

002439 Murphy, Michael B.; Dillon, Aileen; Fitzgerald, M. X. Medical Professorial Unit, University College Dublin, St. Vincent's Hospital, Dublin 4, Ireland **Theophylline and depression.** British Medical Journal. No. 6251:1322, 1980.

Two cases of severe depression subsequent to inhalation of the bronchodilator theophylline are reported. These two cases suggest a paradoxical depressive reaction induced by theophylline. The absence of premorbid depression, the temporal relationship of the onset of symptoms to starting theophylline, their prompt disappearance when it was stopped, and (in the first patient) their return with the reintroduction of theophylline suggest a cause and effect relationship. 5 references. (Author abstract modified)

002440 Murray, John B. Dept. of Psychology, St. Johns University, Grand Central and Utopia Parkways, Jamaica, NY 11439 **Tardive dyskinesia.** Genetic Psychology Monographs. 102(Second Half):161-190, 1980.

Features of tardive dyskinesia (TD) as they occur as neurological extrapyramidal side-effects in susceptible persons receiving neuroleptic drugs are examined. Four types of effect are distinguished: acute dystonic reactions, akathesia, parkinsonism, and akinesia. TS is defined as a motor disorder which is persistent and at times irreversible. It occurs primarily as a result of antipsychotic medication for schizophrenia. No adequate therapy has been developed. In addition to the dopaminergic system of the brain, the neurotransmitter acetylcholine has been implicated in TD, as has GABA. Aspects of the etiology, treatment, and prevention of TD are discussed, and the need for future research on the roles of acetylcholine, dopamine, serotonin, and histamine, and the endorphins is suggested. 158 references. (Author abstract modified)

002441 Nair, N. P. V.; Lal, S.; Schwartz, G.; Thavundayil, J. X. Douglas Hospital Centre, McGill University, Montreal, Quebec, Canada **Effect of sodium valproate and baclofen in tardive dyskinesia: clinical and neuroendocrine studies.** Advances in Biochemical Psychopharmacology. 24:437-441, 1980.

The effects of baclofen (BAC) and sodium valproate (NaV) on basal and haloperiodol-induced prolactin (PRL) secretion, indices of central dopaminergic function, and on tardive dyskinesias in chronic schizophrenic Ss were investigated. Neither BAC nor NaV alone decreased movement scores. However, the combination of NaV plus haloperidol or BAC plus haloperidol was significantly more effective than haloperidol alone in decreasing the dyskinetic movements. Neither BAC nor NaV increased basal serum PRL. Results indicate that concurrent neuroleptic administration is a necessary factor in the therapeutic response to GABAergic agents. 16 references.

002442 Nakane, Yoshibumi; Okuma, Teruo; Takahashi, Ryo; Sato, Yorio; Wada, Toyoji; Sato, Tokijiro; Fukushima, Yutaka; Kumashiro, Hisashi; Ono, Tsuneo. Dept. of Neuropsychiatry, Nagasaki University School of Medicine, 7-1 Sakamoto-Machi, Nagasaki 852, Japan **Multi-institutional study on the teratogenicity and fetal toxicity of antiepileptic drugs: a report of a collaborative study group in Japan.** Epilepsia. 21(6):663-680, 1980.

A multiinstitutional collaborative study was conducted concerning the course of pregnancy and delivery and the incidence of abnormal infants delivered of epileptic women. In a comparison of 657 women receiving antiepileptic drugs with 162 women not receiving drugs the women on antiepileptic drugs had more than three times as many miscarriages and five times as high an incidence of fetal malformation proportionally. General background factors that might exert teratogenic effects on pregnant patients with epilepsy were studied, and the potential toxicity of antiepileptic drugs to the fetus was also analyzed. It is conclud-

ed that a combination of more than three drugs and a daily dose greater than a certain minimal level is likely to produce malformed infants. 52 references. (Author abstract modified)

002443 Neri, A.; Aygen, M.; Zukerman, Z.; Bahary, C. Dept. of Obstetrics and Gynecology, Beilinson Medical Center, Petah Tikva, Tel-Aviv University Sackler Medical School, Israel **Subjective assessment of sexual dysfunction of patients on long-term administration of digoxin.** Archives of Sexual Behavior. 9(4):343-347, 1980.

The finding that male patients receiving digoxin on a long-term basis have increased levels of serum estrogen and decreased levels of plasma testosterone and luteinizing hormone (LH) was further investigated in a group of Ss randomly selected from a rheumatic heart disease population. Data were obtained on experimental and control (nondigoxin) Ss between ages 25 and 40, with an emphasis on sexual desire, sexual excitement, and frequency of sexual relations. The findings support reports concerning digoxin effect on plasma estradiol, testerone, and LH. The differences in the means, found by using the t-test, were significant. A significant decrease in sexual desire, sexual excitement phase (erection), and frequency of sexual relations was noted in the experimental group. 17 references. (Author abstract modified)

002444 Nutt, D. J.; Cowen, P. J.; Green, A. R. MRC Unit and University Dept. of Clinical Pharmacology, Radcliffe Infirmary, Oxford OX2 6HE, England **On the measurement in rats of the convulsant effect of drugs and the changes which follow electroconvulsive shock.** Neuropharmacology. 19(10):1017-1023, 1980.

Three different methods for measuring the convulsant effects of bicuculline, pentylenetetrazol (PTZ) and picrotoxin in rats have been evaluated. Convulsions were assessed following intraperitoneal bolus, intravenous bolus and continuous infusion. Following intraperitoneal injection of all three drugs, the latency to various stages of convulsion (first twitch, writhe, generalized myoclonus and tonic extension) was measured. However, not all animals convulsed, posing problems of interpretation. After an intravenous bolus of the drugs all animals convulsed and the severity of the convulsion (bicuculline or PTZ) or the latency (picrotoxin) was measured. With intravenous infusion, the dose required to produce the first myoclonic jerk was measured. The problems and merits of these methods are discussed. 15 references. (Author abstract modified)

002445 O'Hare, J. A.; Duggan, B.; O'Driscoll, D.; Callaghan, N. Callaghan: Ward 2B, Cork Regional Hospital, Wilton, Cork, Ireland **Biochemical evidence for osteomalacia with carbamazepine therapy.** Acta Neurologica Scandinavica. 62(5):282-286, 1980.

Biochemical evidence for osteomalacia with carbamazepine therapy is presented which is based on a study of 31 patients on carbamazepine as a single drug for epilepsy for a mean duration of 20 months. Three patients had hypocalcemia, and serum calcium was significantly lower, and serum alkaline phosphatase significantly higher than matched control Ss. Serum phosphorus was significantly inversely correlated and serum alkaline phosphatase was positively correlated with both dose and duration, but not blood levels of carbamazepine. These findings are consistent with mild biochemical changes of osteomalacia. Serum bilirubin was very much lower than in controls. Both the calcium and bilirubin disturbances are probably due to carbamazepine causing hepatic microsomal enzyme induction. 10 references. (Author abstract modified)

002446 Oswald, Ian; Adam, Kirstine. University Department of Psychiatry, Royal Edinburgh Hospital, Edinburgh EH10 5HF, Scotland **Benzodiazepines cause small loss of body weight.** British Medical Journal. No. 6247:1039-1040, 1980.

The effects of benzodiazepines on weight loss was investigated. Evidence is reported from a study of the use of benzodiazepines as hypnotics in the treatment of insomnia. The findings indicate that clinical doses over a period of 5 months do not cause humans to gain weight, but cause a small loss. Reasons for the differences in reaction between humans and animals are suggested. 4 references.

002447 Perenyi, Andras; Arato, Mihaly. National Institute for Nervous and Mental Diseases, Budapest, Hungary. **Tardive dyskinesia on Hungarian psychiatric wards.** Psychosomatics. 21(11):904-909, 1980.

Two hundred hospitalized schizophrenic patients, most of whom had received neuroleptic treatment for at least 2 years, were examined. Tardive dyskinesia (TD) was found in 23.5% of them. The frequency and severity of TD increased with age, and the more advanced the age at which the patient started taking neuroleptics, the more likely it was that TD would develop. Severe TD was more common in men than in women. Prolonged treatment with neuroleptics or the use of antiparkinsonism drugs increased the risk of TD. It is noted that these results are in accord with most of the data in the literature. 19 refereneces. (Author abstract modified)

002448 Peselow, Eric D.; Dunner, David L.; Fieve, Ronald R.; Lautin, Andrew. 1322 East 84th Street, Brooklyn, NY 11236 **Lithium carbonate and weight gain.** Journal of Affective Disorders. 2(4):303-310, 1980.

To evaluate weight gain in lithium-treated patients, a group of 21 bipolar patients on lithium were compared with a group of 12 bipolar patients on placebo over a 12-month period. During this time both groups exhibited euthymic mood. Eleven of the 21 patients on lithium gained more than 10 pounds whereas only one placebo patient gained more than 10 pounds. Thirteen of 21 lithium -treated patients showed a gain of 5% total body weight while only 2 of 12 placebo showed such a gain. The findings seem to indicate that weight gain is a direct effect of lithium treatment. 19 references. (Author abstract)

002449 Petit, M.; Lepine, J. P.; Lesieur, Ph. Service Hospitalo-Universitaire, Centre psychiatrique de Rouvray, F-76301 Sotteville-les-Rouen, France **/Chronology of extrapyramidal effects of neuroleptic drugs and the nigrostriatal dopaminergic system./** Chronologie des effets extra-pyramidaux des neuroleptiques et systeme dopaminergique nigro-striatal. Encephale. 5(4):297-316, 1979.

The chronological appearance of the extrapyramidal effects of neuroleptic drugs is discussed based on a study of the literature. According to various researchers, these syndromes appear in the following order: akinetic syndrome, parkinsonian syndrome, and tardive dyskinesia. A table is included which summarizes the various symptom sequences and their neurophysiological correlations with the nigrostriatal dopaminergic system. Analysis of this symptomatologic sequence of extrapyramidal effects restores a neurophysiological coherence to contradictions in the clinical data relating to the mechanisms and modalities of adaptation of the nigrostriatal system's dopaminergic synapse. 70 references. (Journal abstract modified)

002450 Prien, Robert. Psychopharmacology **Research Branch,** National Institute of Mental Health, Rockville, MD, 20857 **Update on lithium: 1979-1980.** Psychopharmacology Bulletin. 16(4):13-15, 1980.

Recent findings on the issue of renal complications with lithium and other lithium toxicity problems are reviewed. While

previous, poorly-controlled, studies had associated renal damage with long-term lithium therapy, several well-controlled studies of the past 2 years either have not supported this contention or have suggested the possibility of only mild lithium toxicity. Other findings suggest that severe affective illness or psychopharmacologic drugs other than lithium used to treat the illness may contribute to the development of chronic interstitial nephritis during lithium treatment. Guidelines to protect against renal complications during lithium use are suggested. Other developments possibly related to lithium toxicity are discussed, including cardiac sinus node dysfunction, acute monocytic leukemia, somnambulism, persistent nephrogenic diabetes insipidus, cogwheel rigidity, and psoriasis. 24 references.

002451 Reidenberg, Marcus M. Cornell University Medical College, 1300 York Avenue, New York, NY 10021 **Drugs in the elderly.** Bulletin of the New York Academy of Medicine. 56(8):703-714, 1980.

Drug therapy for the elderly is reviewed with reference to the unique ways in which the elderly respond to drugs. Their rate of drug metabolism is a little slower, so they need reduced doses of metabolized drugs. Renal function is reduced, so dosages of excreted drugs should be reduced. Their nervous system is unusually sensitive to the depressant effects of benzodiazepines. It is noted that digitalis toxicity is the cause of a substantial fraction of adverse drug reactions in the elderly. It is concluded that because the elderly frequently take many drugs concurrently, they often risk adverse drug interactions including excessive sedation, depression, and drug-induced hearing loss. 44 references. (Author abstract modified)

002452 Rektor, L.; Horka, E. Psychiatricka lecebna, Huskova 2, 618 32 Brno, Czechoslovakia /**Neurotoxicity of lithium. I.**/ Neurotoxicita lithia. I. Ceskoslovenska Psychiatrie. 75(4):232-235, 1979.

Neurological complications of the use of lithium in the prevention of affective psychoses are discussed. Lithium's affinity for the nervous system is discussed. The question of the pathogenesis of the neurotoxic symptoms caused by lithium is approached. Some cases of treatment complications with lithium are quoted from extensive medical literature. These include: effects of lithium on the extrapyramidal system; epileptic paroxysms, which may be related to lithium in blood plasma; and organic psychosyndromes which complicate treatment with lithium.

002453 Serby, M.; Angrist, B.; Lieberman, A. Dept. of Psychiatry, New York University Medical Center, New York, NY 10016 **Psychiatric effects of bromocriptine and lergotrile in parkinsonian patients.** Advances in Biochemical Psychopharmacology. 23:287-292, 1980.

The behavioral effects of bromocriptine and lergotrile in 81 patients with Parkinson's disease are reported. Mental changes were observed in 17 of 66 patients given bromocriptine (25.75%) and in 14 of 53 (26.4%) given lergotrile. Psychiatric consultation was required for 10 patients (5 on each drug) for organic confusional syndrome (OCS), schizophreniform psychosis, personality change, or mixed syndromes. Three of the four patients who showed drug-induced OCS had abnormal pretreatment EEGs, whereas the five patients who developed psychiatric syndromes in a clear sensorium had normal EEGs. 7 references.

002454 Sheehan, David V.; Claycomb, J. Barry; Kouretas, Nicholas. Dept. of Psychiatry, Massachusetts General Hospital, Fruit Street, Boston, MA 02114 **Monamine oxidase inhibitors: prescription and patient management.** International Journal of Psychiatry in Medicine. 10(2):99-121, 1981.

Following a brief review of the historical roots of current physician anxiety about prescription of monomaine oxidase inhibitors (MAOIs), a practical approach to prescription of MAOIs and patient management in treatment, particularly of anxiety and atypical depressions, is presented. The pharmacology of the hydrazine and nonhydrazine MAOIs is examined and indications and contraindications for use in depressions and anxiety are reviewed. Patient preparation and dose regulation are also discussed with reference to possible side-effects and dietary restrictions. Minor and more serious side-effects are detailed; and management of serious side-effects (hypertensive crisis, hepatoxicity, and potentiation effects of other drugs) is outlined. With careful patient selection and preparation, MAOIs are often uniquely effective (as in endogenous anxiety) and have an acceptably low potential for serious toxicity. 55 references. (Author abstract modified)

002455 Smith, James M.; Baldessarini, Ross J. Baldessarini: Mailman Research Center, McLean Hospital, 115 Mill St., Belmont, MA 02178 **Changes in prevalence, severity, and recovery in tardive dyskinesia with age.** Archives of General Psychiatry. 37(12):1368-1373, 1980.

To analyze currently available data that might clarify the relationship of age and tardive dyskinesia (TD) as well as to evaluate areas in which additional research is required, the available published literature was reviewed. Strong linear correlations between ages less than 40 to 70 years and both the prevalences and severity of TD were found, but neither increased significantly after age 70. There was also a strong inverse correlation between rates of spontaneous remission of TS and age (less than 30 to greater than 80 years). TD in those younger than 60 years improved over three times as often as in older patients. These correlations are not readily explained by the duration of previous exposure to neuroleptic drugs and may reflect increased sensitivity of the aging brain to them. These observations support caution in the prolonged use of neuroleptics in patients older than 50 years, but encourage optimism for eventual spontaneous remission of TD in young adults. 63 references. (Author abstract modified)

002456 Smith, Robert C.; Chojnacki, Michael; Hu, Richard; Mann, Edward. Dept. of Pharmacology, Baylor College of Medicine, Houston, TX **Cardiovascular effects of therapeutic doses of tricyclic antidepressants: importance of blood level monitoring.** Journal of Clinical Psychiatry. 41(12):57-63, 1980.

The cardiovascular effects of therapeutic doses of tricyclic antidepressants are reviewed, and their clinical significance is discussed. At standard therapeutic doses these antidepressant drugs produced small changes in heartrate and several intervals of the electrocardiogram (EKG) in some patients, but clinically significant effects on the EKG are seen usually only in patients with high blood levels of the drugs; these high plasma levels are often above those needed for therapeutic antidepressant effects. In contrast, the orthostatic hypotension induced by antidepressants usually occurs at dosages and blood levels within the therapeutic range, and therefore, this side-effect may be of greater clinical significance in standard clinical treatment with antidepressants. Frequent monitoring of plasma levels of antidepressants and EKGs may be important particularly in geriatric depressed patients and in many patients with stable preexisting cardiac disease. 25 references. (Author abstract modified)

002457 Soucek, K.; Zvolsky, P. PK FVL KU, Ke Karlovu 11, 120 00 Praha 2, Czechoslovakia /**Lithium in 1979.**/ Lithium v roce 1979. Ceskoslovenska Psychiatrie. 76(5):341-346, 1980.

Clinical effects of lithium are discussed in light of findings by Ehrlich and associates in 1979 concerning cholinergic neuro-

transmission and the possible nephrotoxicity of lithium. Ehrlich's hypothesis that lithium increases the acetylcholine level, explains the clinical effect of lithium in cases of acute mania, but not in cases of acute depression. With regard to the possibility that treatment with lithium may cause irreversible kidney damage, it is noted that studies evaluating kidney functions did not prove that lithium treatment has any effect on creatinine clearance. On the other hand, many detailed studies have confirmed that many patients treated with lithium showed a substantial decrease in the concentrating capacity of their kidneys. Other studies report neurotoxicity of lithium combined with thioridazine. Another report indicates that in isolated cases lithium may cause thyrotoxicosis. 31 references.

002458 Starkey, I. R.; Lawson, A. A. H. Medical Registrar, Royal Infirmary, Edinburgh EH3 9YW, Scotland **Psychiatric aspects of acute poisoning with tricyclic and related antidepressants -- 1980.** Scottish Medical Journal. 25(4):303-308, 1980.

Adult patients admitted to a medical unit over the last 10 years with acute self-poisoning with a tricyclic or a related antidepressant drug were analyzed with respect to various social and psychiatric aspects of the self-poisoning incident. For 316 consecutive patients admitted to District General Hospital, 54% had sought medical advice in the period immediately prior to the overdosage. The final psychiatric diagnosis following the poisoning was related to the previous events. An attempt was made to judge the appropriateness of the original treatment with antidepressant drugs. Opportunities for prevention of self-poisoning are considered. 11 references. (Author abstract modified)

002459 Staton, R. Dennis; Brumback, Roger A. Psychiatry Service, V.A. Medical Center, Fargo, ND 58102 **Neuroleptic-induced reinnervation sprouting in the central nervous system (a model for the development of tardive dyskinesia and supersensitivity psychosis).** Journal of Clinical Psychiatry. 41(12):427-428, 1980.

The response to blockade of neurotransmission at the neuromuscular junction (peripheral nervous system) as a model for understanding the phenomenon of development of central nervous system hypersensitivity is discussed. Sprouting of new axon terminals has been demonstrated after structural denervation in the CNS. It is believed that sprouting of presynaptic axon terminals also occurs following chemical denervation and produces new synaptic structures. Increased numbers of new synapses produce permanent postsynaptic neuronal overactivity. Thus, chemical denervation may produce permanent alteration of both brain structure and function. Three stages in the development of neuroleptic-induced tardive dyskinesia or supersensitivity psychosis are: reversible neuronal overactivity, covert irreversible neuronal overactivity, and overt irreversible neuronal overactivity. If such permanent anatomic alterations can result from drug administration, greater caution will be necessary in the use of neuroleptic agents. 24 references.

002460 Streltzer, Jon. 1356 Lusitana Street, Honolulu, HI 96813 **Treatment of iatrogenic drug dependence in the general hospital.** General Hospital Psychiatry. 2(4):262-266, 1980.

On the basis of observations from a psychiatric consultation liaison service at a 450-bed general hospital, characteristics of iatrogenic addicts and the incidence and management of iatrogenic drug dependence are discussed. The incidence of patients who become addicted while taking medically-prescribed drugs for organic pathology was not high; only about 10 to 20 cases per year were diagnosed at the hospital. Iatrogenic drug-dependent patients were frequently middle-aged with no history of drug abuse before the onset of a chronic medical condition. Associated with their medical condition was a dependence on narcotics and/or psychotropic drugs for such complaints as pain, headache, insomnia, and anxiety. The addiction may have persisted for years without acknowledgement by the patient, doctor, or family, although a progressive constriction of social and occupational functioning was usually evident. In general, the primary physician is highly valued by the patient, and this manifest appreciation tends to facilitate the physician's continued prescription of large doses of addicting drugs. Treatment involving detoxification typically goes through a series of stages, each with characteristic pitfalls and hazards that can lead to failure in treatment. 9 references. (Author abstract modified)

002461 Szorady, I. Children's Hospital, Szeged, Hungary **Drug content of the mother's milk.** Therapia Hungarica. 28(1):5-9, 1980.

The pharmacotherapy of nursing mothers with respect to drugs excreted with the mother's milk in lower or higher concentrations is reviewed, and drugs are classified as harmful or harmless for the breastfed baby. According to observations, the prescription of phenothiazines (Hibernal, Pipolphene, Tisercin, Aparkazine, Ridol, Trisedyl, Haloperidol, Imap, Melleril, Droperidol, etc.) and antidepressive agents (Nuredal, Melipramine, Sapilent, Teperin, and lithium carbonate) requires special precautions. It is suggested that the dose should always be chosen individually, and that these potent drugs should be changed during lactation if possible to minor tranquilizers, or if their administration is absolutely necessary according to psychiatric indication, the doses should be lowered. The consequences of the mother's treatment with antibiotics and chemotherapeutics, sulphonamides, analgesics, hypnotics, narcotics, and muscle relaxants are also discussed, as well as effects of caffeine, alcohol, cigarettes, and drug addiction. 27 references.

002462 Thiels, Cornelia. Maudsley Hospital JCR, Denmark Hill, GB-London SE 5, England **/Psychopharmaceuticals and pregnancy: a review./** Psychopharmaka und Schwangerschaft: Eine Ubersicht. Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(6):301-317, 1980.

Literature on the use of psychoactive drugs in pregnancy and during breastfeeding is reviewed. It is contended that the question of guidelines for adequate treatment of pregnant psychiatric patients cannot be answered in an unequivocal or reassuring way. Because of inconclusive knowledge of this subject, caution is demanded prior to prescribing the drugs. Isolated, but unproven, evidence of damage to unborn children as a result of the use of the drugs should also be taken into account. Use of neuroleptics, tricyclic antidepressants, tranquilizers, and lithium in pregnancy is discussed based on findings in the literature. 104 references. (Journal abstract modified)

002463 Tollefson, Gary. 640 Jackson Street St., Paul, MN 55101 **Psychiatric implications of anticonvulsant drugs.** Journal of Clinical Psychiatry. 41(9):295-302, 1980.

The contemporary pharmacological agents utilized in the control of epileptiform activity are systematically reviewed from a behavioral perspective. Noteworthy to the psychiatric practitioner are the spectrum of iatrogenic sequelae attributable to these agents. These disturbances may have peripheral (e.g., hepatic dysfunction, blood dyscrasia, or lupus-like syndromes) or central (e.g., altered neurotransmission) manifestations. The influence of altered levels of cyclic nucleotides in these phenomena is presented. It is reported that, whether an idiosyncratic reaction, toxic circumstance, or untoward drug interaction, there is scant understanding of the predisposing factors or recognition of the neuropsychiatric influence of anticonvulsant therapy. 59 references. (Author abstract modified)

002464 Tyrer, Peter. no address **Dependence on benzodiazepines.** British Journal of Psychiatry. 137(December):576-577, 1980.

Increasing problems of benzodiazepine dependence are briefly discussed, along with evidence of withdrawal symptoms. These agents have reportedly produced symptoms of anxiety, dysphoria, muscle twitching, insomnia, dizziness, palpitations, hypersensitivity to noise and touch, and shaking. Some depersonalization and perceptual changes have also been noted. Since few conclusive clinical studies have been conducted, these observations are tentative, but physicians are cautioned to be aware of the possible addictive properties of these drugs and to educate their psychiatric and general practice patients in this regard. 12 references.

002465 Vestergaard, P.; Amdisen, A.; Hansen, H. E.; Schou, M. Universite d'Aarhus, Institut de Psychiatrie, Hopital Psychiatrique, DK-8240 Risskov, Denmark **/Recent developments in lithium treatment: is it dangerous for the kidney?/** Considerations recentes sur le traitement au lithium. S'agit-il d'une therapeutique dangereuse pour le rein? Encephale. 5(5, Suppl.):633-639, 1979.

The renal function of more than 200 patients undergoing lithium treatment is being studied. The glomerular function seems to be affected to a small extent, even by short-term lithium administration, and there have been no instances of progressive deterioration of renal function with axotemia. Most of the patients have impaired water reabsorption with polyuria and polydipsia. This is frequently combined with lowered concentrating ability. Polyuria and lowered concentrating ability are not in themselves life-threatening. However, development of dehydration may lead to lithium poisoning, and patients under lithium treatment should be advised to drink extra fluid under circumstances when the fluid balance may become negative. Further studies are required for definitive recommendations concerning extra monitoring of kidney function and lowering of lithium doses. 5 references. (Journal abstract modified)

002466 Wada, Juhn A. no address **Epilepsy: neurotransmitter, behaviour and pregnancy.** Canadian League Against Epilepsy and Western Inst. on Epilepsy, 1979. 92p.

A collection of 11 papers on neurotransmitters, abnormal behavior, and pregnancy as these relate to seizures is presented. The papers on neurotransmitters include research on catecholamines, amino acids, and peptides of the enkephalin series. Four papers, of which two employ largely subjective testing methods, discuss abnormal behavior. The papers on pregnancy include the teratogenicity of anticonvulsants, physiological changes during pregnancy and their effects on anticonvulsant kinetics, the frequency and complications of seizures in the gravid patients, and the effects of seizures on the fetus.

002467 Wasserman, Sheldon; Yahr, Melvin D. Yahr: Dept. of Neurology, Mount Sinai School of Medicine, 100th St. at Fifth Avenue, New York, NY 10029 **Choreic movements induced by the use of methadone.** Archives of Neurology. 37(11):727-728, 1980.

A case report of a 25-year-old man receiving methadone hydrochloride maintenance therapy for heroin addiction who developed choreic movements of the upper limbs, torso, and speech mechanisms is presented. Discontinuation of methadone resulted in complete alleviation of the abnormal movements with no recurrence during the subsequent 8 months. It is claimed that this is the first recorded instance of a movement disorder induced by an opiate. The mechanisms by which drugs may alter neurotransmitter relationships in the brain and produce symptoms of this type are discussed. 10 references. (Author abstract modified)

002468 Weiner, William J.; Koller, William C.; Perlik, Stuart; Nausieda, Paul A.; Klawans, Harold L. Dept. of Neurology, Rush-Presbyterian-St. Luke's Medical Center, 1725 W. Harrison St., Chicago, IL 60612 **Drug holiday and management of Parkinson disease.** Neurology. 30(12):1257-1261, 1980.

The effects of a period of transient drug withdrawal (drug holiday) in 16 patients who manifested complications of chronic levodopa therapy (dyskinesia, on/off phenomena, hallucinosis, and loss of therapeutic effectiveness) were investigated. Patients were evaluated daily before, during, and after the period of drug withdrawal. Eleven of the 16 patients exhibited enhanced motor responsiveness after the holiday and required only half of the initial daily dose for improved motor performance. Most lithium-induced side-effects decreased after the holiday. Hallucinosis was ameliorated in all cases. The frequency of on/off phenomena and myoclonus also diminished. Sensitivity to levodopa-induced dyskinesia was not affected by the drug holiday. Because most patients required lower dosage after the holiday, dyskinesias were no longer present. These observations suggest that Parkinsonian patients who suffer complications of chronic levodopa therapy may benefit from a period of drug withdrawal. 29 references. (Author abstract modified)

002469 Wester, H.-A.; Siegers, C.-P. Siegers: Institut fur Toxikologie, Medizinische Hochschule Lubeck, Ratzenburger Allee 160, D-2400 Lubeck, West Germany **Cardiovascular effects of mianserin and amitriptyline in healthy volunteers.** International Journal of Clinical Pharmacology Therapy and Toxicology. 18(12):513-517, 1980.

The cardiovascular effects of amitriptyline, a classic tricylic antidepressant, were compared with those of mianserin, a tetracyclic compound, in 10 healthy Ss. Myocardial contractility decreased 17% after 6 days of treatment with amitriptyline, but not after administration of mianserin. Both antidepressants increased mean arterial blood pressure, but only amitriptyline increased heartrate. Results suggest that mianserin may be preferable to amitriptyline in treating depressed patients with a history of cardiac disease. 17 references. (Author abstract modified)

002470 Wilbur, Robert; Kulik, Frank A. Robert Wilbur Associates, 125 West 96th St., New York, NY 10025 **Propranolol (Inderal) for tardive dyskinesia and extrapyramidal side effects from neuroleptics: possible involvement of beta-adrenergic mechanisms.** Progress in Neuro-Psychopharmacology. 4(6):627-632, 1980.

Four psychotic patients with neuroleptic-induced tardive dyskinesia and extrapyramidal side-effects were successfully treated with propranolol (30 to 60mg/day). Relief of orofacial symptoms and tremor was apparent in 1 to 10 days, and no side-effects of propranolol were observed. The use of propranolol in tardive dyskinesia is discussed with reference to a possible beta-adrenergic modulation of the dopaminergic/cholinergic balance in the striatum. 23 references. (Author abstract modified)

002471 Wysocki, Timothy Theodore. Western Michigan University **Effects of thioridazine (Mellaril) on titrating delayed matching to sample performance in mentally retarded adults.** Dissertation Abstracts International. 41(6):2369-B, 1980. Ann Arbor, Univ. Microfilms No. 8025975, 40p., 1980.

The effects of the reduction of the subjects' chronic doses of thioridazine on the performance by four mentally-retarded adults of a titrating delayed matching to sample discrimination were investigated. Concurrent with learning assessments, the subjects' thioridazine was reduced systematically in a multiple baseline across subjects design. For all subjects, the limit of

delay, defined as the longest delay at which the subject emitted four consecutive correct responses in a 30-minute session increased after, and only after, reductions in the daily thioridazine dose had been implemented. Informal observations of the subjects in their institutional living environments revealed no systematic increases in inappropriate behavior for any of the subjects following drug reductions. Results indicate that the withdrawal of chronically-administered thioridazine resulted in increased accuracy in the delayed matching to sample task, suggesting strongly that the drug impairs performance of this task. Until further research is conducted to determine the extent to which this disruption affects adaptation to the environment, caution is recommended in prescribing thioridazine. (Journal abstract modified)

002472 Yvonneau, M.; Huguet, R. C.H.S. de Vauclaire, F-24700 Montpon-Menesterol, France **/Bromism, hysteria and narcolepsy./** Bromisme, hysterie et narcolepsie. Evolution Psychiatrique. 45(3):535-552, 1980.

A case of brominis (or bromism) which was mistaken for hysteria and narcolepsy is discussed. A woman had been taking a syrup of bromide, chloral hydrate, and henbane for over 20 years without realizing its addicting effects. The intoxication caused a long period of hypersomnia, hallucinations, and neurologic crises which were mistaken for hysteria before resulting in chronic confusion and epilepsy. An updated report on brominism is also presented. 27 references. (Journal abstract modified)

002473 Zeisel, Steven H.; Gelenberg, Alan J.; Growdon, John H.; Wurtman, Richard J. Dept. of Nutrition and Food Science, Lab. of Neuroendocrine Regulation, Massachusetts Institute of Technology, Cambridge, MA 02139 **Use of choline and lecithin in the treatment of tardive dyskinesia.** Advances in Biochemical Psychopharmacology. 24:463-470, 1980.

Studies of the use of choline and lecithin in the treatment of tardive dyskinesia are described, and the application of precursor therapy to other neurological diseases is discussed. It is reported that orally-administered lecithin, a choline containing compound that occurs naturally in foods, or choline itself, can significantly diminish the involuntary movements of tardive dyskinesia. It is anticipated that lecithin, or choline, may be clinically useful in diseases with decreased cholinergic activity and which met the following criteria: 1) complete destruction of the cholinergic tract involved in the disease must not have occurred; 2) adequate numbers of postsynaptic receptors must exist; and 3) there must be no feedback mechanism that immediately reduces the firing rate of the presynaptic neuron as soon as the pecursor begins to enhance transmitter release. 43 references.

16 METHODS DEVELOPMENT

002474 Aman, Michael G.; Wakeman, Philip. Dept. of Psychiatry, University of Auckland, Private Bag, Auckland, New Zealand **A simple system for control of the continuous performance test in psychopharmacological research.** Progress in Neuro-Psychopharmacology. 4(6):621-626, 1980.

A system has been developed to regulate the Continuous Performance Task, a test of attention span frequently used to monitor drug effects in hyperactive and learning-disabled children. The control unit includes an ordinary cassette tape recorder and a tone control apparatus that programs tapes and regulates stimulus presentations. The system is inexpensive, reliable, and suitable for clinical practice as well as research programs in which elaborate programming equipment is not available. 7 references. (Author abstract modified)

002475 Armstrong-James, M.; Millar, J.; Kruk, Z. L. Dept. of Physiology, London Hospital Medical College, Turner Street, London E1 2AD, England **Quantification of noradrenaline iontophoresis.** Nature. 288(5787):181-183, 1980.

A technique is described which allows precise determination of the concentration of noradrenaline in the immediate environment of the cell during iontophoresis, and which largely overcomes the problem of low spike signal to noise rations while recording single cell activity in conventional multibarrel electrodes. It is noted that the recording and iontophoretic properties of these electrodes have been described previously. The use of these electrodes to quantify precisely iontophoresed noradrenaline by adapting polarographic techniques is described. 17 references. (Author abstract modified)

002476 Atrens, D.M.; Becker, F. T.; Hunt, G. E. Dept. of Psychology, University of Sydney, Sydney, N.S.W. 2006, Australia **Apomorphine: selective inhibition of the aversive component of lateral hypothalamic self-stimulation.** Psychopharmacology. 71(1):97-99, 1980.

To assess the possibility that discrepancies in the reported effects of apomorphine on lever-press self-stimulation are due to peculiarities of the lever-press test situation, the effects of apomorphine on locomotor initiation of an escape from lateral hypothalamic stimulation in a shuttle-box were investigated. Apomorphine had relatively little effect on the initiation behavior, but it produced a large and dose dependent inhibition of escape. These data suggest that apomorphine acts to inhibit the aversive component of lateral hypothalamic stimulation. The implications of these findings for the usefulness of the shuttle-box in investigating the pharmacology of self-stimulation are discussed. 17 references. (Author abstract modified)

002477 Biggio, G.; Corda, M. G.; De Montis, G.; Gessa, G. L. Institute of Pharmacology, University of Cagliari, Cagliari, Italy **Differential effects of kainic acid on benzodiazepine receptors, GABA receptors, and GABA-modulin in the cerebellar cortex.** Advances in Biochemical Psychopharmacology. 21:265-270, 1980.

The differential effects of kainic acid on benzodiazepine receptors, GABA receptors, and GABA-modulin in the cerebellar cortex were studied. Results show that intracerebellar kainic acid injection markedly reduces 3H-diazepam binding, causes the almost complete loss of GABA-modulin, but increase 3H-GABA binding. These results indicate that in the cerebellar cortex benzodiazepine receptors and GABA-modulin reside on neuronal structures that are sensitive to kainate neurotoxicity, and which are distinct from those on which Na independent GABA receptors are located. The potential utility of kainic acid for mapping GABA-modulin in CNS is noted. 14 references.

002478 Blass, Elliott M.; Pedersen, Patricia E. Johns Hopkins University, Charles and 34th Streets, Baltimore, MD 21218 **Surgical manipulation of the uterine environment of rat fetuses.** Physiology & Behavior. 25(6):993-995, 1980.

A surgical technique for manipulation of the amniotic fluid of individual rat fetuses is described. The normal appearance and suckling behavior of operated animals suggest that the procedure is benign. It is noted that the ability to safely and effectively alter the environment in which the rat fetus bathes could lend insight into the sensitivity of the fetal receptors and the capability of the rat fetus to detect and respond to a changing intrauterine environment. The technique also offers a more direct means for assessment of the effects of drugs and hormones experienced in the amniotic sac. 6 references. (Author abstract modified)

002479 Busch, M.; Klapproth, H. E.; Lucker, P. W.; Schmitz, H. Lucker: Institut fur Klinische Pharmakologie Dr. Lucker GmbH, Leiningerstrasse 5, D-6719 Bobenheim am Berg, West Germany /A **novel psychometric test model applying tailored testing for economic and efficient collection of psychopharmacological effects./** Ein neues psychometrisches Testmodell auf der Basis des Erfassung psychopharmakologischer Effekte. Arzneimittel-Forschung. 29(5):859-863, 1979.

A novel psychometric test model based on tailored testing, for economic and efficient collection of psychopharmacological effects is described. Using a quadruple cross-over design, the effects of pemoline were compared with caffeine, hexobarbital and placebo. Dependent measures used were memory, ability to concentrate, psychomotor skills, and mental stress. In three of the eight cases, pemoline induced a remarkable improvement in concentration and psychomotor skills. However, in the more complex tasks, a higher rate of mistakes was found. The psychometric test model was found to be reliable for evaluating psychopharmacological effects, even with small numbers of Ss. 1 reference. (Journal abstract modified)

002480 Cohen, Bruce M.; Lipinski, Joseph F.; Pope, Harrison G.; Harris, Peter Q.; Altesman, Richard I. McLean Hospital, 115 Mill Street, Belmont, MA 02178 **Neuroleptic blood levels and therapeutic effect.** Psychopharmacology. 70(2):191-193, 1980.

Studies attempting to delineate a therapeutic range of blood levels for neuroleptics are critically reviewed, and problems with these studies are discussed. A study is described in which a correlation was sought between blood levels of thioridazine and clinical efficacy. The study employs the radioreceptor assay for neuroleptics to detect both parent drug and active metabolities in blood. Results indicate that while dose is a poor predictor of blood levels of medication, blood levels of neuroleptic activity in patients on thioridazine may be very highly correlated with antipsychotic effect. 12 references. (Author abstract modified)

002481 Davis, John M.; Dysken, Maurice W.; Haberman, Shelby J.; Javaid, Javaid I.; Chang, Sidney S.; Killian, Grant A. Illinois State Psychiatric Institute, Chicago, IL 60612 **Use of survival curves in analysis of antipsychotic relapse studies.** Advances in Biochemical Psychopharmacology. 24:471-481, 1980.

The use of survival curves in analysis of relapse studies of the efficacy of antipsychotic maintenance medication is critically examined, and the conclusion that 50% of patients do not relapse when withdrawn from antipsychotic maintenance medication is challenged. Data from 30 maintenance studies that have compared the efficacy of antipsychotic drugs vs. placebo in preventing schizophrenic relapses are reviewed. It is contended that the conclusion of these studies that 50% of patients on placebo do not relapse is based on an invalid conceptual appraisal of these data. It is argued that the absolute percentage of patients relapsing at a given arbitrary time point is not a valid measure of maintenance therapy efficacy. 8 references.

002482 Downing, Robert W.; Rickels, Karl. Psychopharmacology Research and Treatment Unit, Dept. of Psychiatry, University of Pennsylvania, Philadelphia, PA **Responders and nonresponders to chlordiazepoxide and placebo: a discriminant function analysis.** Progress in Neuro-Psychopharmacology. 4(4/5):405-415 , 1980.

Data from 356 anxious outpatients treated with either chlordiazepoxide or placebo in 4-week, double-blind drug trials were analyzed in an attempt to determine predictors of treatment response using extreme groups and discriminant function analysis. Chlordiazepoxide response was found to be greater in younger female patients with lower levels of initial depression and a more favorable prognosis. Placebo response was found to be greater in younger, Black, previously-untreated or favorably drug-treated patients and patients with lower initial somatization and depression. Discriminators between drug and placebo response include age, previous drug treatment, race, and initial level of somatic symptomatology. 10 references. (Author abstract)

002483 Fischer-Cornelssen, Kurt A. Im Lohgraben 53, CH-4104 Oberwil/BL, Switzerland **Methods of multicenter trials in psychiatry -- part I: review.** Progress in Neuro-Psychopharmacology. 4(6):545-560, 1980.

The design and execution of multicenter psychopharmacological trials are discussed. Double-blind multicenter trials permit the use of sample sizes large enough to provide statistically meaningful results. However, nontreatment variables must be rigidly controlled and procedures must be carefully standardized. 66 references.

002484 Fray, P. J.; Sahakian, B. J.; Robbins, T. W.; Koob, G. F.; Iversen, S. D. Robbins: Dept. of Experimental Psychology, Downing St., Cambridge CB2 3EB, England **An observational method for quantifying the behavioural effects of dopamine agonists: contrasting effects of d-amphetamine and apomorphine.** Psychopharmacology. 69(3):253-259, 1980.

A novel means of measuring and analyzing behavioral effects of dopamine agonists is described and illustrated by a comparison of the effects of d-amphetamine and apomorphine in the rat. d-Amphetamine produced significant dose-dependent and time-dependent changes in responses such as locomotion, rearing, and sniffing, but not in licking or gnawing. In contrast, apomorphine produced significant increases in licking and gnawing, as well as in locomotion and sniffing, but no changes in rearing. Results are discussed in comparison with those obtained by other methods, such as photocell beam interruptions or stereotypy rating scales, and may be of importance in elucidating the functions of the forebrain dopamine projections. 27 references. (Author abstract)

002485 Gander, Robert Ernest. University of Toronto (Canada) **Psychoactive drug quantification by visual flicker sensitivity measurement. (Ph.D. dissertation).** Dissertation Abstracts International. 41(6):2254-B, 1980. (Not available from Univ. Microfilms), 1980.

A solid-state visual stimulus was developed for use in pharmacodynamic studies of psychoactive drugs involving visual flicker sensitivity measurement. The construction and use of the instrument are described. The dose response/time course of effect on flicker sensitivity was determined for ethanol and diazepam. In the frequency region tested, flicker frequency was affected by diazepam and by diazepam plus ethanol, but not by ethanol alone. These findings are the first in which physiological drug effects were separated from psychological effects, and the first to relate changes in flicker sensitivity to drug concentrations in the blood. (Journal abstract modified)

002486 Garland, W. A.; Muccino, R. R.; Min, B. H.; Cupano, J.; Fann, W. E. Hoffmann-La Roche Inc., Bldg. 86, Room 905A, Nutley, NJ 07110 **A method for the determination of amitriptyline and its metabolites nortriptyline, 10-hydroxyamitriptyline, and 10-hydroxynortriptyline in human plasma using stable isotope dilution and gas chromatography-chemical ionization mass spectrometry.** Clinical Pharmacology and Therapeutics. 25(6):844-856, 1979.

A gas chromatography/mass spectrometry method was developed for measuring amitriptyline and its metabolites nortriptyline, 10-hydroxyamitriptyline, and 10-hydroxynortriptyline in

human plasma. The assay sensitivity is 0.5ng/ml for amitriptyline, nortriptyline, and 10-hydroxyamitriptyline and 1ng/ml for 10-hydroxynortriptyline. Following oral administration of 75mg of amitriptyline to two Ss, the mean plasma levels of amitriptyline, nortriptyline, 10-hydroxyamitriptyline, conjugated 10-hydroxyamitriptyline, 10-hydroxynortriptyline, and conjugated 10-hydroxynortriptyline were 36, 8, 10, 66, 16, and 46ng/ml respectively 2 hours after dosing and 3, 4, 0.5, 1, 6, and 17ng/ml respectively 72 hours after dosing. Plasma samples from 12 Ss who had been receiving 50mg amitriptyline, three times a day for an average of 32 days had a mean concentration of 81ng/ml amitriptyline, 71ng/ml nortriptyline, 12ng/ml 10-hydroxyamitriptyline, 91ng/ml conjugated 10-hydroxyamitriptyline, 82ng/ml 10-hydroxynortriptyline, and 176ng/ml conjugated 10-hydroxynortriptyline. 40 references. (Author abstract modified)

002487 Hamilton, M. University of Leeds, Dept. of Psychiatry, 30, Clarenda Road, Leeds, LS2 9LT, England **/Rating of antidepressant activity./** Methodologie d'appreciation de l'efficacite des antidepresseurs. Encephale. 5(5, Suppl.):651-654, 1979.

Recent and possibly future developments concerning the rating of antidepressant activity are reviewed. Topics include the organization of trials, the selection of patients, methods of assessment and their statistical analysis, the specific problems of side-effects of drugs, and the social aspects of depressive illness. 5 references. (Journal abstract modified)

002488 Hollister, Leo E.; Davis, Kenneth L.; Berger, Philip A. V.A. Hospital, 3801 Miranda Ave., Palo Alto, CA 94304 **Subtypes of depression based on excretion of MHPG and response to nortriptyline.** Archives of General Psychiatry. 37(10):1107-1110, 1980.

The relationship between urinary excretion of 3-methoxy-4-hydroxyphenylglycol (MHPG) and the clinical response of 17 depressed patients to nortriptyline hydrochloride was investigated. Depression scores were not reduced significantly more among the nine low excreters as compared with the eight normal to high excreters. However, when a true bimodal distribution of MHPG excretion was created by comparing only the six lowest excreters with the six highest excreters, the low group improved significantly more than the high group. This differential response to nortriptyline somewhat supports the notion that MHPG excretion may predict response to specific tricyclics. However, collecting urine for MHPG determination in depressed patients is not easy; the variability of excretion within patients is considerable, and the range of MHPG excretion closely parallels that in normals. The clinical utility of this procedure is still to be determined. 21 references. (Author abstract modified)

002489 Ilien, Brigitte; Gorissen, Hugo; Laduron, Pierre. Dept. of Biochemical Pharmacology, Janssen Pharmaceutica, B-2340 Beerse, Belgium **Solubilization of serotonin receptors from rat frontal cortex.** Biochemical Pharmacology. 29(24):3341-3344, 1980.

The solubilization by lysolecithin of (3H)spiperone binding from rat frontal cortex which retain the high affinity characteristics of the membrane serotonin receptor is reported. This was made possible by using R-5573 to prevent the very high nonspecific binding of (3H)spiperone to the spirodecanone sites. The macromolecular complex obtained and labelled with (3H)spiperone retained the high affinity characteristics of the serotonin receptor in the original membranes; this receptor was not detectable in the cerebellar extract and differed markedly from the dopamine receptors solubilized by digitonin from rat striatum. 20 references. (Author abstract modified)

002490 Iversen, Susan D. Cambridge University, Cambridge, England **Animal models of relevance to biological psychiatry.** Handbook of Biological Psychiatry. Part 1:303-335, 1979.

Implications for biological psychiatry of animal models of human psychopathology are reviewed, and animal models of anxiety, psychotic behavior, and depressive syndromes are described. Topics discussed include: the effects of immediate punishment; conditioned emotional responses (CER); novel tests for antianxiety drugs; behavioral basis of action of antianxiety drugs; neuropharmacological basis of action of antianxiety drugs; dopaminergic models for quantifying neuroleptic drugs; serotonergic models of psychosis; development models of depression; learned helplessness; and other models of depression. 126 references.

002491 Javaid, J. I.; Dekirmenjian, H.; Dysken, M.; Davis, J. M. Illinois State Psychiatric Institute, Chicago, IL 60612 **Measurement of fluphenazine by gas chromatography in human plasma and red blood cells.** Advances in Biochemical Psychopharmacology. 24:585-589, 1980.

A technique for measurement of fluphenazine in human plasma and red blood cells by gas chromatography is described. It is noted that acetylation of the solutions resulted in improved resolution and sensitivity for haloperidol, fluphenazine, and perphenazine. Acetophenazine and piperacetazine eluted only after acetylation. Thus, a simple acetylation technique increases the versatility of the nitrogen detectors for gas liquid chromatography. The enhanced chromatographic response of acetylated drugs make possible assay of these drugs in blood samples and assessment of the relationship between blood levels and treatment responses. 12 references.

002492 Jung, Louis; Staveris, Stavros. Universite Louis Pasteur, 74, Route du Rhin, Illkirch-Graffenstade, B.P. 10, F-67048 Strasbourg Cedex, France **/Relationship between structure and neuroleptic activity: pharmacophore and pharmacokinetics./** Relations structure-activite des neuroleptiques: pharmacophore et pharmacocinetique. Psychologie Medicale. 12(12):2577-2582, 1980.

The relationship between the chemical structure and therapeutic activity of various neuroleptics is examined. It is hypothesized that certain chemical groups transport the neuroleptic to specific tissues (i.e., those rich in either type-1 or type-2 dopamine receptors). The sulfamide neuroleptics tend to migrate to type-1 dopamine receptors; the chlorines and -OCH3 or -SCH3 favor type-2 dopamine receptors; the halogens show no preference. At present it is not possible to explain the reasons for this activity. 14 references.

002493 King, G. A.; Burnham, W. M. Bio-Research Laboratories, 87 Senneville Road, Senneville, Quebec H9X 3R3, Canada **Effects of d-amphetamine and apomorphine in a new animal model of petit mal epilepsy.** Psychopharmacology. 69(3):281-285, 1980.

The effects of d-amphetamine and apomorphine in a new animal model of petit-mal epilepsy were investigated. Significant suppression of flash-evoked afterdischarge (FEAD) was observed at doses of d-amphetamine greater than 0.2mg/kg. A maximum decrease of 60% occurred at 1.2mg/kg. Higher doses did not result in any further suppression. In contrast, apomorphine had no effect on the FEAD even at doses that induced intense stereotypic behavior. In other experiments, administration of either the dopamine antagonist pimozide or the alpha-adrenergic antagonist phenoxybenzamine exacerbated FEAD and also prevented the suppression of FEAD by d-amphetamine. Results support the hypothesis that the FEAD is a valid model of the petit-mal seizure. Furthermore, they provide evidence that nore-

pinephrine is necessary for the seizure suppressant action of d-amphetamine. 34 references. (Author abstract modified)

002494 Libus, J.; Libusova, E. Psychiatric Clinic, 580 01 Havlickuv Brod, Czechoslovakia **To the clinical evaluation of anxiolytics (tofisopam).** Activitas Nervosa Superior. 22(3):184-185, 1980.

Methodological considerations concerning the clinical evaluation of anxiolytics (specifically tofisopam) in the treatment of neurotics are discussed. It is noted the psychosocial factors, including Ss' previous experiences with psychotropic drugs, attitudes toward treatment, and the negative effects of placebo treatments influence evaluation of a drug's anxiolytic effect. To demonstrate the specific effect of a certain drug in neurosis, it is necessary to assess separately the patient, therapist, and therapy. In evaluating drug effects in neurosis, the system of two therapists is most suitable (wherein one therapist estimates the course of treatment with standard rating scales and the other therapist's task is to assess global improvement).

002495 Ludden, Thomas M. Dept. of Pharmacology, University of Texas Health Science Center, San Antoinio, TX 78284 **Individualization of phenytoin therapy.** Journal of Pharmacy and Pharmacology. 32(2):152, 1980.

The individualization of phenytoin dosage regimens based on steady-state serum concentrations at two or more dosing rates is discussed. The importance of evaluating assay accuracy, patient compliance, and the fraction of steady-state that a given serum concentration represents is emphasized. 9 references.

002496 Lund, Alf. Institute of Forensic Medicine, University of Copenhagen, Frederik den V.s Vej 11, DK-2100 Copenhagen O, Denmark **The distribution of chlorpromazine between plasma and erythrocytes.** Acta Pharmacologica et Toxicologica. 47(4):300-304, 1980.

Chlorpromazine was taken up by human erythrocytes in a dissociable binding similar to plasma protein binding. The plasma/cell (PC) ratio had an average value of two but was subject to large interindividual variations. The PC ratio was only moderately affected by the presence of other drugs and anticoagulants in the blood. Results suggest that the binding of antidepressants to red cells may be of equal or greater importance than their binding to plasma protein. 12 references. (Author abstract modified)

002497 Maguire, K. P.; Norman, T. R.; Burrows, G. D.; Scoggins, B. A. Norman: University of Melbourne, Clinical Sciences Block, c/o P.O. Royal Melbourne Hospital, Melbourne, Victoria 3050, Australia **An evaluation of maprotiline intravenous kinetics and comparison of two oral doses.** European Journal of Clinical Pharmacology. 18(3):249-254, 1980.

The kinetics of maprotiline were evaluated in six normal volunteers following rapid intravenous administration of 75mg. Mean estimates of half-life, volume of distribution, and systemic clearance were obtained. Blood plasma concentrations varied between Ss from 0.77 to 1.64. A comparison of the bioavailability of two oral doses (a 75mg tablet and three 25mg tablets) was also undertaken. No significant difference was observed between the maprotiline concentrations obtained for the two doses at sampling times up to 26 hours. No significant difference was found in the area under the concentration versus time curves for the two doses. It is concluded that equivalent bioavailability exists: systemic bioavailability averaged 66% and 70% for the 75mg and three 25mg tablets respectively. 14 references. (Author abstract modified)

002498 Mahuzier, G.; Tsitini-Tsamis, M.; Boyer, P. Centre Hospitalier Specialise, 54, avenue de la Republique, F-94800 Villejuif, France **/Determination of tricyclic and tetracyclic antidepressants and of their metabolic products in biological fluids./** Determination des antidepresseurs tri et tretracycliques et de leurs metabolites dans les milieux biologiques. Therapie. 34(6):659-684, 1979.

Methods of analysis used to measure antidepressant levels in biological fluids are described. These methods are: spectrophotometry, spectrofluorimetry, high performance liquid chromatography, gas chromatrography on a glass column, radioimmunology, and mass spectrometry. Use of these methods to measure dibenzoazepines (imipramine, desipramine, clomipramine, trimeprimine, opipramol, carpipramine), dibenzocycloheptanes and their derivatives (amitriptyline, nortriptyline, doxepine, dosulepin), dibenzocycloheptenes (protriptyline), dibenzodiazepines (propizepine, dibenzepine), and tetracyclic antidepressants (maproptiline) is discussed. It is concluded that in the future these analyses will be useful in understanding action mechanisms, secondary effects, and medication interactions. 113 references. (Journal abstract modified)

002499 Midha, K. K.; Charette, C. College of Pharmacy, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, S7N 0W0 **Radioimmunoassay for total doxepin and N-desmethyl doxepin in plasma.** Communications in Psychopharmacology. 4(1):11-15, 1980.

A new sensitive and rapid radioimmunoassay procedure for the determination of total plasma concentrations of the tricyclic drug doxepin and its metabolite N-desmethyl doxepin is described. Doxepin, a mixture of the CIS and TRANS isomers of 11-(3-dimethylaminopropylidine)-6H-dibenz(b,e)oxepin, is a tricyclic antidepressant drug used for the treatment of depression and/or anxiety neurosis. The assay enables the quantitation of 250 pg of the drug in 200 microl of plasma. The method is suitable for single-dose pharmacokinetic studies and can be applied to therapeutic monitoring in patients. 18 references. (Author abstract modified)

002500 Moss, D. E.; McMaster, S. B.; Castaneda, E.; Johnson, R. L. Laboratory of Psychobiochemistry, Dept. of Psychology, University of Texas, El Paso, TX 79968 **An automated method for studying stereotyped gnawing.** Psychopharmacology. 69(3):267-269, 1980.

A simple, automated method for studying stereotyped gnawing in rats which provides a continuous quantitative record of the specific gnawing behavior induced in rats by methylphenidate, an amphetamine-like psychostimulant, is described. It is noted that psychostimulant-induced stereotyped behavior in rats may serve as an animal model for psychosis. Previous methods for measuring behavioral stereotypies of this kind have required continuous observation and rating of the behaviors or semiquantitative techniques that fail to produce a continuous record of the behaviors. The apparatus described and the test procedures developed are compatible with a wide variety of common counters and recorders. 11 references. (Author abstract modified)

002501 Nautsch, J. P.; Rolf, L. H.; Brune, G. G. Dept. of Neurology, University of Munster, Roxelerstrasse 131, D-4400 Munster, West Germany **A rapid gas liquid chromatography method for simultaneous determination of various anticonvulsants.** Journal of Neurology. 223(3):219-223, 1980.

The development of a rapid gas liquid chromatography (GLC) method for the simultaneous determination of various anticonvulsants (carbamazepine, diphenylhydantoin, phenobarbital, and primidone) is reported. Using a metal column (OV-17)

with flash heater methylation as well as high N2 flow rate, a quantitative methylation of the above anticonvulsants was obtained. A selective temperature program proved to be the decisive factor in separating the various methylated anticonvulsants. The GLC program was completed within 13 min. The method permits a rapid, simultaneous and quantitative determination of various anticonvulsants. 8 references. (Author abstract modified)

002502 Palmer, M. R.; Wuerthele, S. M.; Hoffer, B. J. Dept. of Pharmacology, Univerisity of Colorado Health Sciences Center, 4200 E. Ninth Avenue, Denver, CO 80262 **Physical and physiological characteristics of micropressure ejection of drugs from multibarreled pipettes.** Neuropharmacology. 19(10):931-938, 1980.

The micropressure ejection technique was characterized in vivo as well as in vitro. Volumes of radiolabelled drug released from multibarreled pipettes by this method increased linearly with increasing ejection pressure of time. This was reflected in vivo by graded inhibitions of cortical cell activity with increasing ejection pressures of enkephalin. The linearity of this response was independent of interejection time, suggesting that there is no warm-up phenomenon with the micropressure ejection technique. In vitro, interejection times did not affect the amount of 3H sucrose released by micropressure ejection. The volume of drug released by micropressure ejection was highly reproducible. Likewise, the responses of cerebellar Purkinje cells to repeated pressure applications of norepinephrine or GABA were uniform over long periods of time. In addition to the linearity and reproducibility of micropressure ejection, these studies demonstrate that substances which are difficult to apply by iontonphoresis, such as peptides, are readily applied by this method. 17 references. (Author abstract modified)

002503 Reinhard, John F., Jr.; Ozaki, Yoshisuke; Moskowitz, Michael A. Moskowitz: Room 37-311, M.I.T., Cambridge, MA 02139 **A specific and sensitive microassay for hydroxyindoles in biological material -- application for cerebral microvessels, brain, and pineal organ of the rat.** Biochemical Pharmacology. 29(21):3020-3023, 1980.

A specific and sensitive microassay for hydroxyindoles in biological material is presented, and its application for cerebral microvessels, brain, and pineal organ of rat is described. It is noted that one of the most effective methods for measuring small amounts of serotonin, which involves conversion of serotonin to (3H)melatonin, does not provide the sensitivity initially reported because the radioactive product is not adequately resolved from other isotopic products. The sensitivity and reliability of this existing radioenzymatic microassay for serotonin were increased by coupling the procedure to a unidimensional multiple development thin layer chromatography procedure, which separates the isotopic melatonin formed from all other indoles in biological matter. 9 references.

002504 Rossor, M. N.; Watkins, J.; Brown, M. J.; Reid, J. L; Dollery, C. T. MRC Neurochemical Pharmacology Unit, Dept. of Neurology, Addenbrooke's Hospital, Hills Road, Cambridge CB2 2QQ, England **Plasma levodopa, dopamine and therapeutic response following levodopa therapy of parkinsonian patients.** Journal of the Neurological Sciences. 46(3):385-392, 1980.

In a double-blind, placebo-controlled study of 6 parkinsonian patients given a single dose of oral levodopa, the plasma levodopa and dopamine, as measured by a radioenzymatic method, both correlated with clinical improvement. There was a closer correlation with plasma dopamine than with plasma levodopa and it is proposed that peripheral decarboxylation may reflect central decarboxylation. The much lower dopamine levels in this study than those previously reported probably reflect the ability of the modified radioenzymatic assay to measure accurately small quantities of dopamine in the presence of excess dopa, which can be confirmed with each assay by the use of an appropriate dopa internal standard. 21 references. (Author abstract modified)

002505 Rubin, Robert T.; Forster, Bella. Dept. of Psychiatry, Harbor/UCLA Medical Center, Torrance, CA 90509 **Haloperidol stimulation of prolactin secretion: how many blood samples are needed to define the hormone response?** Communications in Psychopharmacology. 4(1):41-47, 1980.

In a series of experiments, an attempt was made to define the minimum blood sampling schedule that will suffice to reflect accurately the full, integrated prolactin response to neuroleptics. Haloperidol, 0.5mg, was given intramuscularly to 18 normal men and intravenously to seven normal men. Prolactin levels were measured in blood samples taken every 20 minutes for 1 hour before and 7 hours after drug administration. Correlation analysis indicated that: 1) sampling for 3 hours postdrug sufficed to accurately reflect the full 7 hour prolactin response profile, and 2) log transformation of the prolactin data enhanced the strength of the correlations. 19 references. (Author abstract modified)

002506 Sitaram, N.; Gillin, J. Christian. Unit on Sleep Studies, Biological Psychiatry Branch, NIMH, 9000 Rockville Pike, Bethesda, MD 20014 **Development and use of pharmacological probes of the CNS in man: evidence of cholinergic abnormality in primary affective illness.** Biological Psychiatry. 15(6):925-955, 1980.

The role of cholinergic mechanisms in the regulation of CNS functions was studied in normal humans in an attempt to develop in vivo pharmacological techniques to assess central neurotransmitter activity in normals and then apply them in primary affective illness and other neuropsychiatric conditions. Central cholinergic stimulation by cholinomimetics-induced REM sleep, dreaming, cortical arousal, and accelerated the REM cycle. Effects on memory included enhancement of serial learning, short-term consolidation of low imagery words, and retrieval of clustered information. Analgesia and reduction of the P100 component of visual EEG evoked responses were also noted after physostigmine. Using the induction of REM sleep by arecoline as a marker of central cholinergic functioning, it was possible to demonstrate both the phenomenon of pharmacological denervation supersensitivity in normal humans after pretreatment with scopolamine and a significantly faster REM induction by arecoline in two groups of patients with primary affective illness (remitted and depressed) compared to normals. Rapid REM induction was found not only in remitted patients who were drug-free for 2 weeks, but in patients who had never received somatic therapy. Pretreatment with scopolamine on three consecutive mornings also induced sleep changes at night in normals similar to several sleep abnormalities reported in primary affective illness. This was confirmed by a multivariate discriminate analysis program, previously shown to separate depressed patients, insomniacs, and normals. On the basis of these data, it is proposed that cholinergic abnormalities may be present in primary affective illness during both the ill and the well states. 59 references. (Author abstract)

002507 Skula, E.; Novotna, J.; Prikryl, T. Havlickova 1, 772 00 Olomouc, Czechoslovakia **Adherence to lithiotherapy.** Activitas Nervosa Superior. 22(3):176, 1980.

A method for distinguishing compliance with lithium pharmacotherapy from a type of noncompliance is described. Patients take two to three doses of lithium immediately before blood sampling to monitor compliance (to achieve therapeutic plasma

levels). It is noted that the fall of lithium concentration in erythrocytes after interrupted medication is much faster if therapeutic levels were attained by one or two doses than by long-term administration. Two or three samplings in 24 hr intervals after the lithium stop appear to be suitable. Under these conditions, lithium concentration in erythrocytes remains virtually unchanged at regular lithium intake, and in plasma decreases slower than after short-term application.

002508 Tsuei, S. E.; Nation, R. L.; Thomas, J. Nation: Foundation 41, The Women's Hospital, Crown Street, Sydney, N. S. W. 2010, Australia **Sorption of chlormethiazole by intravenous infusion giving sets.** European Journal of Clinical Pharmacology. 18(4):333-338, 1980.

The sorption of clomethiazole by intravenous infusion giving sets was investigated. Average recoveries of clomethiazole following 500ml infusions were 78.5%, 82.2%, and 71.2% for the IVAC Volume Infusion Set, Travenol Code AHC 2890 Blood Administration Set, and the McGaw Metriset, respectively. The effluent concentration time profile using set-up procedures and infusion rates similar to those used clinically were followed. When compared to solutions flowing at an infusion rate of 75ml/h and 150ml/h, loss of clomethiazole from solutions standing static in the infusion sets was higher while that of solutions flowing at high rate of 999ml/h was lower. The clinical and pharmacokinetic significance of these phenomena are discussed. 13 references. (Author abstract)

002509 Waddington, John L; Gamble, Stephen J. Division of Psychiatry, MRC Clinical Research Center, Watford Road, Harrow HA1 3UJ, England **Spontaneous activity and apomorphine stereotypy during and after withdrawal from 3 1/2 months continuous administration of haloperidol: some methodological issues.** Psychopharmacology. 71(1):75-77, 1980.

Spontaneous activity and apomorphine stereotype during and after withdrawal from 3 1/2 months continuous administration of haloperidol were investigated, and methodological issues in this area are addressed. Rats were treated continuously with haloperidol in drinking water for 3 1/2 months. Prior to withdrawal of neuroleptic both spontaneous activity and stereotypy responses to a low dose of apomorphine were significantly reduced. Thus, these indices of dopamine receptor blockade did not show tolerance or adaptation. When these measures were repeated shortly after haloperidol withdrawal, stereotypy responses of the control group were indistinguishable from their responses on initial testing while haloperidol-withdrawn animals showed substantially more intense responsivity than on their initial assessment; the stereotypy responses of haloperidol-withdrawn animals were indistinguishable from parallel control values at 10 min to 20 min after apomorphine challenge but were significantly above control values at 30 to 40 min after challenge. Control animals showed habituation of locomotor activity in 30 to 40 min after challenge. Control animals showed habituation of locomotor activity in the motility monitor when measures on the first and second assessments were compared while haloperidol animals showed indistinguishable activities on each assessment. Such methodological epiphenomena may influence the interpretation of studies on the functional sequelae of prolonged neuroleptic treatment and its subsequent withdrawal in the rat. 8 references. (Author abstract modified)

002510 Wiles, D. H.; Gelder, M. G. University of Oxford, Dept. of Psychiatry Research Unit, Littlemore Hospital, Oxford, England **Plasma fluphenazine levels by radioimmunoassay in schizophrenic patients treated with depot injections of fluphenazine decanoate.** Advances in Biochemical Psychopharmacology. 24:599-602, 1980.

A simple procedure for determination of plasma fluphenazine (FPZ) levels by radioimmunoassay in schizophrenic patients treated with depot injections of FPZ decanoate is described. Thirty-eight intervals between injections were examined in 33 patients already established on FPZ decanoate. Simultaneous blood and lumbar cerebrospinal fluid (CSF) samples were obtained from six patients receiving FPZ decanoate every 2 weeks. One patient was studied during the transition from oral FPZ hydrochloride to FPZ decanoate. Injection was followed by a rapid rise in plasma FPZ to a maximum at 1 to 8 hours postinjection. It is suggested that this postinjection peak may have some clinical significance, particularly in regard to side-effects. Data indicate that the radioimmunoassay gives a reasonable estimate of those circulating components of the FPZ molecule which cause a pharmacological effect in man. 4 references.

002511 Williams, Bradford Warren; Brown, Walter Armin. Neuroendocrine Research Laboratory, VA Medical Center, Providence, RI 02908 **Psychotropic drugs do not interfere with radioligand assays for prolactin, cortisol, and growth hormone.** Communications in Psychopharmacology. 3(5):359-362, 1979.

Radioligand assays for human growth hormone, prolactin, and cortisol were carried out on plasma treated with toxic or therapeutic concentrations of methadone, thioridazine, haloperidol, bromperidol, lithium carbonate, methylphenidate, chlordiazepoxide, amitriptyline, or dextroamphetamine. Plasma hormone concentrations were not significantly affected by the addition of any of these commonly used psychotrophic drugs. Results suggest that the drugs do not interfere directly with the assays and that the alterations in circulating hormone levels reported for patients treated with psychotropic drugs occur through physiological mechanisms. 7 references. (Author abstract modified)

002512 Yesavage, Jerome A.; Adey, Michael. Dept. of Psychiatry, Stanford University School of Medicine, Stanford, CA **Design aspects of clinical trials with ergot alkaloids: a comparison of two geriatric behavioral rating scales.** Advances in Biochemical Psychopharmacology. 23:357-362, 1980.

Two behavioral rating scales, the Sandoz Clinical Assessment Geriatric and the Crichton Royal Behavioral Rating Scale, were used to assess the effects of Hydergine in moderately demented elderly Ss. Although certain aspects of the scales correlated well with each other, overall they failed to show comparable results when measuring change in Ss over time. Possible causes of this discrepancy are discussed. 0 references.

17 MISCELLANEOUS

002513 Abuzzahab, F. S., Sr.; Zimmermann, R. L. University of Minnesota Hospitals, Minneapolis, MN 55455 **Factors determining patient tenure on a 3-year double-blind investigation of pimozide versus fluphenazine HCl.** Advances in Biochemical Psychopharmacology. 24:547-550, 1980.

Factors determining patient tenure on a 3-year double-blind investigation of pimozide vs. fluphenazine HCl were investigated. During the 3-year period, a bimodal distribution of dropouts was observed, with peaks in the numbers of dropouts during the first and third years. No pretreatment predictors of patient tenure on either drug regimen were found. No significant differences occurred between the two treatment groups in the early terminators; only in the long-term patients did treatment differences emerge. Data indicate that early terminators discontinued treatment for nontreatment related reasons. It is concluded that differential effectiveness of maintenance drug treatments cannot be evaluated in acute or short-term studies. 6 references.

002514 Allman, Thomas Francis Michael. Boston College **Recidivism and rehabilitation rates for 135 criminally insane offenders. (D.Ed. dissertation).** Dissertation Abstracts International. 41(6):2776-A, 1980. Ann Arbor, Univ. Microfilms 8027577, 150p., 1980.

The relationship between rehabilitation services and antipsychotic medication as those relate to recidivism and rehabilitation rates was investigated in a sample of 135 criminally insane offenders. Findings indicate that rehabilitation services received were positively related to a lower recidivism rate. No other significant relationships emerged, but further analysis led to several additional findings. There was a significant positive relation between release destination and recidivism rate. Other significant positive relationships include those: 1) between rehabilitation service referral source and recidivism rate, 2) between rehabilitation service referral source and rehabilitation rate and 3) between substance bause and recidivism rate. Implications of findings are discussed in terms of release planning and postrelease provision of services, particularly mental health and rehabilitation services. Suggestions are offered for further research. (Journal abstract modified)

002515 Angelucci, L.; Valeri, P.; Palmery, M.; Patacchioli, F. R.; Catalani, A. Instituto de Farmacologia e Farmacognosia, Universita di Roma, I-00185 Roma, Italy **Brain glucocorticoid receptor: correlation of in vivo uptake of corticosterone with behavioral, endocrine, and neuropharmacological events.** Advances in Biochemical Psychopharmacology. 21:391-406, 1980.

Studies concerning the correlation between in vivo uptake of corticosterone and various behavioral, endocrine, and neuropharmacological events are reviewed. Concentrations of labeled corticosterone in blood, brain regions, and hypophysis were measured 1 hour in mice, or 2 hours in rats, after the i.p. injection of a tracer dose of 3H-corticosterone, at various times after adrenalectomy. Results are expressed as concentration ratios between limbic area and cortex, the latter assumed to represent unspecific uptake in equilibrium with blood, or hypophysis and blood. Reciprocal control between limbic structures and hypothalamohypophysoadrenal function, which is finely adjusted through a hormonal feedback mechanism, is postulated. It is proposed that in the machinery subserving this feedback controlled control, use is made of the ability of glucocorticoid binding capacity in the hippocampus to adapt according to: 1) an autonomous hormone independent property, integrated in the circadian and behavior shaping circuitry of the CNS; 2) the property of glucocorticoid hormone to regulate its own binding sites in brain and hypophysis either positively (slow process) or negatively (fast process); and 3) the property of ACTH of concurring with glucocorticoid hormone in the negative regulation. 49 references

002516 Annitto, William; Prien, Robert; Gershon, Samuel. New York University Medical Center, 550 First Avenue New York, NY 10016 **The lithium ion: is it specific for mania?** In: Belmaker, R., Mania: an evolving concept. New York, Spectrum Publications, 1980. 403 p. (p. 127-141).

In a discussion of whether lithium is specific for mania, the hypothesis is presented that there exists a group of patients who suffer from cyclic, remitting, nondeteriorative illness and who return to previous levels of functioning after ingesting lithium. The use of lithium in mania and schizophrenias and its side-effects (neurotoxicity) are discussed. The use of lithium is considered in such cyclic disorders as epilepsy, emotionally unstable character disorder, recurrent aggression, periodic catatonia, alcoholism, premenstrual tension, and chronic cluster headache. 42 references.

002517 Ayd, Frank J., Jr. no address **Haloperidol update: 1958-1980.** Baltimore, Ayd Medical Communications, 1980. 234 p. $20.00.

Literature on the use of haloperidol in treating psychoses is reviewed. The emergence of this prototype butyrophenone is explained, followed by articles on the use of haloperidol in clinical practice, the complications, and ethical and legal aspects. The uses of the drug in alcoholism and with elderly patients are discussed and doubts arising from the concurrent use of lithium are weighed. Appraisals of critical evidence are included and should be helpful for those in training and those prescribing the drug to their patients.

002518 Bacikova, B.; Hosek, K. ul. Jana Zizky 708, 686 01 Uherske Hradiste, Czechoslovakia **Comparison of drug prescriptions for psychiatric patients after hospital discharge in the districts Teplice and Uherske Hradiste.** Activitas Nervosa Superior. 22(3):227-228, 1980.

The drug prescriptions for psychiatric outpatients in two Czechoslovakian districts (Teplice and Uherske Hradiste) are compared. Data from 410 discharged psychiatric patients for the year 1978 are presented. Analysis of these data indicates that: 1) there are significant differences in the prescribing behavior of psychiatrists in the two districts; 2) neuroleptics are commonly prescribed with other drugs; and 3) pharmacotherapy is symptom oriented.

002519 Ban, T. A.; Ceskova, Eva. Tennessee Neuropsychiatric Institute, Vanderbilt University, Nashville TN 37203 **Long-acting antipsychotic drugs.** Psychopharmacology Bulletin. 16(4):6-13, 1980.

The current status of long-acting neuroleptics, which maintain effective antipsychotic concentrations for at least a week after a single dose, is reviewed. The development of these depot preparations and the differential properties of two types are discussed. Pharmacokinetic findings and short-term and long-term adverse effects are examined. It is concluded that depot neuroleptics, although guaranteeing receipt of medication through regular administration of long-acting injections, have not reduced the rate of relapse usually observed with regular neuroleptics. Further, in spite of the fact that they are given in significantly lower doses than those required from regular neurolep-

tics, they have also not decreased the incidence and severity of acute and chronic adverse effects. 111 references.

002520 Ban, Thomas A. Vanderbilt University, Nashville, TN 37203 **Discussion of WHO activity in biological psychiatry with special reference to training.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1398-1400).

Training models employed by the World Health Organization in the teaching of biological psychiatry are described. Three models, which emphasize clinical psychopharmacology, have been implemented over the past 10 years. These include short-term courses in clinical psychopharmacology, long-term programs in biological psychiatry, and research workshops focusing on multicenter clinical psychopharmacological studies. 1 reference. (Author abstract modified)

002521 Bellantuono, C.; Reggi, V.; Tognoni, G.; Garattini, S. Gavattini: Istituto di Ricerche Farmacologiche Negri', Via Eritrea, Milan 62, I-20157, Italy **Benzodiazepines: clinical pharmacology and therapeutic use.** Current Therapeutics. 21(5):123-126, 130, 132-133, 135, 137-140, 144-146, 1980.

The general pattern of consumption of benzodiazepines is examined with implications for clinical pharmacology and therapeutic use. Topics include the main kinetic properties which define the chemical profile of the benzodiazepines, those compounds that are preferable for sleep induction, the manner in which the drugs are best employed in anxiety, and the disease states that necessitate dosage modification. It is suggested that use of the tranquilizers is more than a medical practice and has probably reached the scale of a mass cultural phenomenon. The compounds are absorbed quickly and formation of the active metabolite nordiazepam may have special clinical relevance as it accumulates during continued treatment. This possibly accounts for a substantial part of the side-effects. Response to the various benzodiazepines differs considerably between individual patients. 4 references.

002522 Berde, B. Research and Development, Pharmaceutical Div., Sandoz, Ltd., CH-4002 Basel, Switzerland **Ergot compounds: a synopsis.** Advances in Biochemical Psychopharmacology. 23:3-23, 1980.

The pharmacology of ergot alkaloids and their derivatives (including ergotamine, bromocriptine, dihydroergotamine, dihydroergotoxine mesylate, methylergometrine, methysergide, and lysergic acid diethylamide) is reviewed. Pharmacological profiles of these compounds reveal qualitative as well as quantitative differences, as measured by alpha-adrenoceptor blockade, serotonin receptor blockade, dopaminergic stereotypy, contralateral turning behavior, and other pharmacological tests. The clinical applications of the ergot alkaloids are correspondingly diverse, including postpartum hemorrhage, migraine and other vascular headaches, venostasis, orthostatic hypotension, senile cerebral insufficiency, conditions associated with hyperprolactinemia, and Parkinson's disease and related extrapyramidal disorders. Animal studies indicate that bromocriptine acts as a mixed agonist/antagonist at presynaptic and postsynaptic dopamine receptor sites. 104 references.

002523 Beyer, Stephan. no address **Madness and medicine: the forcible administration of psychotropic drugs.** Wisconsin Law Review. 1980(3):497-567, 1980.

The nature is examined of the legal claim of the right to be free from government intrusion directly upon the mind, put forth by mental patients requesting that psychotropic drug administration be barred without the patient's consent. The claim to mental integrity is seen to rest on previously established constitutional rights to mental autonomy and bodily integrity. The reluctance of state legislatures and state courts to believe that psychotropic drugs are as invasive as electroconvulsive therapy and psychosurgery, and require similar safeguards is examined. Litigation at the federal level where courts have been more receptive to arguments from bodily integrity is also considered. It is suggested that a change in the law and the view of the courts of these petitions will come about only as the factual bases of these claims emerge and as attitudes toward mental illness change. 304 references.

002524 Biggs, John S. G.; Allan, John A. Dept. of Obstetrics and Gynaecology, Clinical Sciences Building, Royal Brisbane Hospital, Queensland 4029, Australia **Medication and pregnancy.** Current Therapeutics. 21(11):27-29, 31-32, 34-35, 1980.

Medications commonly required in pregnancy are considered and their use and effects are reviewed according to when they are given (early pregnancy, any stage of pregnancy, late pregnancy, and during labor). Specific complaints common in pregnancy include heartburn, indigestion, constipation, vaginal and vulval irritations, urinary infections, and edema. Insomnia and anxiety caused by discomfort and stressful emotions often present medical problems. The use of hormones, analgesics, corticosteroids, sedatives, and antibiotics are discussed. The most important principle in medication is that with few exceptions, all drugs given to the mother pass to the fetus and may affect it either in utero or after birth. It is emphasized that medication in pregnancy must always be given with great caution.

002525 Bircher, J. Institut fur Klinische Pharmakologie, Universitat Bern, Murtenstrasse 35, CH-3010 Bern, Switzerland / **Measurement of plasma concentrations of drugs as a feedback control mechanism during drug therapy./** Messungen der Plasmakonzentration von Medikamenten zur Steuerung der Pharmakotherapie. Therapeutische Umschau (Revue therapeutique). 37(10):918-923, 1980.

The measurement of plasma concentrations during drug therapy for feedback purposes is considered. The adequacy of drug intake by the patient and the relationship of the dosage schedule and expected plasma concentrations are important considerations. It is suggested that interpretation of measured plasma concentrations should be based on: 1) the history of drug intake prior to blood sampling; 2) knowledge about the pharmacokinetics of the drug; and 3) an understanding of the disease of the patient. If a maximal pharmacological effect is to be achieved with a minimum of toxic complications, it is often possible to respond to the individual patient's needs by working out a dosage schedule which is based on measurements of drug concentrations in plasma. The pharmacokinetics and therapeutic plasma concentrations of the tricyclic antidepressants imipramine, nortriptyline, and lithium and the antiepileptic drugs phenytoin, phenobarbital, primidone, valproate, and carbamazepine are presented. 10 references. (Journal abstract modified)

002526 Bleeker, J. A. C.; de Jonghe, F.; Lindenberg, E. D. J. Psychiatric Clinic, University of Amsterdam, Amsterdam, The Netherlands **Clinical comparability of psychotropic drugs.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 913-918).

An approach for developing the action profiles of various psychotropic drugs is presented which allows clinical comparisons of their effectiveness. It is suggested that a drug can be defined by its influence or action on each of the pathological phenomena related to its functions; an action may be inducing or reducing. Nine pathological phenomena and 18 related drug actions (in alleviating these pathologies) are defined with the appropriate drug, and they are:, psychosis, anxiety, agitation, in-

somnia, euphoria, depression, extrapyramidal dysfunction, parasympathetic hyperactivity, and sympathetic hyperactivity. An illustration is given of the clinical profile of haloperidol, as compared with other agents such as chlorpromazine and diazepam. Stimulating, sedative, hypnogenic, antieuphoric, and extrapyramidal actions are described.

002527 Blundell, John Edward; Tombros, Erotokritos; Rogers, Peter John; Latham, Colin John. Dept. of Psychology, University of Leeds, Leeds, England **Behavioural analysis of feeding: implications for the pharmacological manipulation of food intake in animals and man.** Progress in Neuro-Psychopharmacology. 4(4/5):319-326, 1980.

Certain techniques are described for the behavioral characterization of the effects of drugs on feeding. These techniques are designed to reveal the way in which feeding behavior is organized by examining the microstructure and macrostructure of eating activities. In rats, results have: 1) revealed a behavioral profile of amphetamine anorexia; 2) permitted a differentiation between the ways in which differing groups of pharmacological agents adjust food intake by altering the elements of feeding behavior; and 3) drawn attention to the way in which anorexic drugs may reduce food intake by intervening in a natural system which matches food intake to energy demands or by merely obstructing normal feeding responses. In human studies, the techniques have been used to distinguish between the inhibitory actions on food intake of different anorexic drugs and to illustrate how long-term drug administration (e.g., phenothiazine treatment in psychotic patients) may promote weight gain by adjusting the basic pattern of feeding. 25 references. (Author abstract modified)

002528 Bobon, D. P. Dept. of Psychiatry, University of Liege Medical School, Liege, Belgium **Some ways to increase chances to discover the CNS drugs of the future.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 897-901).

The need for an overall improvement in methods of collecting and analyzing clinical data in future psychopharmacological research is discussed. The inadequacy of techniques (lack of intrareliability and interreliability, lack of validation of tests, inadequacy of data analysis and observer bias) is considered. Specific requirements include: 1) balance and feedback between descriptive and quantitative psychopathology; 2) sophisticated mathematical analysis of small samples bringing out interindividual variability; 3) adequate selection of designs and tests depending on what is being measured and the manner in which it is being measured; 4) increased research on the validity of psychometric and psychological tests and test variables; 5) time blind evaluations of videotaped interviews; and 6) improved international standardization of rating systems. 13 references. (Author abstract modified)

002529 Boyer, P.; Tsamis, M.; Mahuzier, P. Clinique des Maladies Mentales et de l'Encephale, 100, rue de la Sante, F-75014 Paris, France /**Pharmacokinetics and plasma levels of polycyclic antidepressants: a general review of products.**/ Pharmacocinetique et concentrations plasmatiques des antidepresseurs polycycliques: une revue generale des produits. Encephale. 6(4):333-347, 1980.

Studies of plasma levels of tricyclic and tetracyclic antidepressants are discussed. In the majority of the studies, results show significant relationships between plasma levels and clinical efficacy. In particular, plasma levels of two tricyclics (nortriptyline and imipramine) are unequivocally related to clinical efficacy. The correlations are highest for nondelusional endogenous depressions. Results are contradictory for amitriptyline, a fact which may be attributed to methodological discrepancies such as: choice of diagnostic criteria, choice of sampling week, number of samples, and sensitivity and specificity of the analysis. Neuroleptic association increases the plasma levels of polycyclic antidepressants, and benzodiazepines do not change them whereas all the hepatic enzymatic inductors decrease them. 56 references. (Journal abstract modified)

002530 Cayreyre, Mireille. Laboratoires Hoechst, Tour Roussel Nobel, Cedex 3, F-92080 Paris La Defense, France /**Alival: new clinical applications, studies in progress, and new possibilities.**/ Alival: indications originales. Etudes en cours. Nouvelles perspectives. Psychologie Medicale. 12(C):91-98, 1980.

Alival, its uses to date, experiments in progress, and possible future uses are reviewed. Alival is pharmacologically an antidepressant but has no central or peripheral anticholinergic effects. In addition it contains a central stimulant and does not induce dependency. Preliminary studies of Alival's use for depressed elderly subjects show encouraging results. It has been used with alcoholics because of its stimulant effect and because it does not react with alcohol. Data from studies of Alival's effectiveness in treating alcoholics have not yet been analyzed. There is underway at this time a study on Alival's effect on postoperative depression. Possible future uses which need more study are uses in cancer patients' depression, sexual problems and depression, and migraines. Its effect on the secretion of prolactin also deserves further investigation. 21 references.

002531 Claghorn, James L.; Mathew, Roy J. Texas Research Institute of Mental Sciences, Houston, TX 77030 **How appropriate is a practice?** Journal of Clinical Psychiatry. 41(12):3-5, 1980.

Trends in psychiatric practice are considered in relation to the medical model. It is noted that with the introduction of psychotropic drugs a chain reaction was set in motion which began with the rapid reduction of the state hospital populations and a stimulation of clinical research efforts. The clinical ratings scales developed to measure a change in drug-treated patients, served the purpose of sharpening clinician's thinking about nosology and merged with other ongoing trends to increase the precision of diagnosis which has resulted in the implementation of newer more precise research diagnostic criteria and finally the introduction of the Diagnostic and Statistical Manual, 3rd edition. It is observed that with the study of the physiological pharmacology of these drugs has come a series of findings that offer the potential for increasing diagnostic precision by identifying biological alterations which highly correlate with various psychiatric disorders. 5 references. (Author abstract modified)

002532 Clark, Wesley, G.; Clark, Yvonne L. Dept. of Pharmacology, Southwestern Medical School, University of Texas Health Science Center, Dallas, TX 75235 **Changes in body temperature after administration of adrenergic and serotonergic agents and related drugs including antidepressants.** Neuroscience and Biobehavioral Reviews. 4(3):281-375, 1980.

The research literature concerning changes in body temperature after administration of adrenergic and serotonergic agents and related drugs including antidepressants is reviewed. It is noted that the 841 citations in this review have appeared primarily since 1965, and that the substances investigated include ergot alkaloids, amphetamines, tryptamines, monoamine oxidase inhibitors, tricyclic and other antidepressants, a variety of other agents which alter presynaptic aminergic mechanisms including reserpine, 6-hydroxydopamine, p-chlorophenylalanine, alpha-methyltyrosines, cocaine, guanethidine and bretylium. The information listed includes the species used, route of administration and dose of drug, the environmental temperature at which the experiments were performed, the number of tests, the direction

and magnitude of body temperature change, and remarks on the presence of special conditions, such as age or lesions, or on the influence of other drugs, such as antagonists, on the response to the primary drug. 841 references. (Author abstract modified)

002533 Clineschmidt, Bradley V.; Bunting, Patricia R. Merck Institute for Therapeutic Research, West Point, PA **Differential effects of pharmacological agents acting on monoaminergic systems on drug-induced anorexia.** Progress in Neuro-Psychopharmacology. 4(4/5):327-339, 1980.

The research and clinical literature concerning the differential effects of pharmacological agents acting on monoaminergic systems on drug-induced anorexia is reviewed. A subdivision of anorectic drugs has emerged with compounds being classified as either amphetamine-like, acting via a catecholaminergic mechanism; or fenfluramine-like, exerting their anorectic effect primarily through endogenous neuronal serotonin or dirctly on receptors for serotonin. The most consistent evidence supporting the subdivision of anorexigens comes from studies with pharmacological antagonists. Supporting evidence derives from investigations using inhibitors of monoamine synthesis, neurotoxins such as 6-hydroxydopamine and 5,6-dihydroxytryptamine, and inhibitors of the monoaminergic uptake processes. 48 references. (Author abstract modified)

002534 Crooks, J.; Stevenson, I. H. no address **Drugs and the elderly: perspectives in geriatric clinical pharmacology.** Baltimore, University Park Press, 1979. 304 p. $49.50.

The proceedings of a symposium on geriatric clinical pharmacology, held at the University of Dundee, September 1977, are presented. Pharmacokinetics, drug sensitivity, and clinical aspects of drug use in the elderly are discussed in relation to the aging process. Drugs commonly used in elderly patients, such as benzodiazepines, antidepressants, and digoxin, are discussed in detail.

002535 Danckwardt, Joachim F. Goethestrasse 26, D-7400 Tubingen 1, West Germany **/Psychopharmaceuticals -- a problem for psychotherapists?/** Psychopharmaka -- ein Problem fur Psychotherapeuten? Praxis der Psychotherapie und Psychosomatik. 25(3):99-113, 1980.

The impact of combined treatment of psychogenic disturbances with psychotherapy and psychopharmaceuticals simultaneously was studied. Using efficiency ratings and comparisons, each therapy was evaluated for its particular methodological problems. Alternate methods of research, including individual case study and nonstatistical methods of prediction, are discussed. The cause and effect interaction between psychotherapy and psychopharmaceuticals is examined. 54 references. (Journal abstract modified)

002536 Darcourt, G. Service de Psychiatrie et de Psychologie Medicale, Hopital Pasteur, F-06031 Nice Cedex, France **/Convergences and divergences between biological psychiatry and psychotherapy./** Convergences et divergences entre psychiatrie biologique et psychotherapie. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1514-1517).

The divergences and convergences between biological psychiatry and psychotherapy are discussed. Total divergence between the two is impossible. In psychoanalysis, for example, the use of speech as the only means of action disregards the utilization of biological psychiatric interventions. However, psychotherapeutic methods which also take into account the biological side (symptomatology, pharmacology) do exist. It is concluded that a compromise between biological research and psychoanalytic therapy is essential. (Author abstract modified)

002537 Debus, Gunter; Janke, Wilhelm. Psychological Dept., Technical University of Aachen, Jagerstrasse 17-19, D-5100 Aachen, West Germany **Methods and methodological considerations in measuring anti-anxiety effects of tranquilizing drugs.** Progress in Neuro-Psychopharmacology. 4(4/5):391-404, 1980.

The primary psychological measures for the assessment of anxiety states in psychopharmacological research are reviewed. It is concluded that there exist almost no tests which specifically measure anxiety. Fundamental problems which arise in the application of tests attempting to assess the antianxiety effects of drugs are discussed. The main problems are selection of Ss and the situational conditions under which the drug is given to Ss. 33 references. (Author abstract modified)

002538 DeFeudis, Francis V. Institut Henri Beaufour, 72 Avenue des Tropiques, Z.I. Courtaboeuf, F-91440 Lew Ulis, France **Physiological and behavioral studies with muscimol.** Neurochemical Research. 5(10):1047-1068, 1980.

Studies concerning the neurophysiological and behavioral effects of muscimol and its analogs are reviewed and analyzed. In vivo inontophoretic studies have greatly increased knowledge of the active conformation(s) adopted by GABA during its interaction with neuronal synaptic (or extrasynaptic) receptors, and behavioral studies have supported the notion that central GABAergic systems might be involved in convulsions, extrapyramidal functions, and other behaviors. However, behavioral studies with muscimol remain difficult to interpret in terms of central GABAergic systems, especially since muscimol is extensively metabolized and since it appears to interact with membrane sites other than GABA receptors. Muscimol does not appear to be useful for reversing human neurologic/psychiatric disorders. 114 references. (Author abstract modified)

002539 Deniker, P.; Zarifian, E. Service Hospitalo-Universitaire de Sante Mentale et de Hopital Sainte-Anne, 1, rue Cabanis, F-75674 Paris Cedex 14, France **Antipsychotics and antidepressants: new trends and expected future.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 887-891).

Evidence is reported that of the many antipsychotic and antidepressant drugs on the market, most do not differ from the parent compounds. It is contended that the only possibility for discovering new psychotropic families is to increase knowledge of the biological mechanisms of psychiatric disorders. Recent data on neurotransmitters and brain receptors are reviewed and suggestions are made for new perspectives in future drug development. Focus is on: 1) the role of GABA on dopaminergic pathways and implications for the treatment of schizophrenia; 2) stimulation or blockage of beta receptors in the brain; and 3) implications from the recent discovery of opiate and benzodiazepine receptors. Another avenue of development of new drugs involves investigation of the correlations between clinical symptoms and biological modification, or the empirical discovery of the psychotropic activity of molecules. 10 references. (Author abstract modified)

002540 Dlabac, A.; Krejci, I. Kourimska 16, 130 60 Prague 3, Czechoslovakia **Central dopaminergic effects of ergoline derivatives.** Activitas Nervosa Superior. 22(3):208-209, 1980.

The effects of four ergoline derivatives, potential inhibitors of pituitary prolactin release, and an ergolene compound, lisuride, were studied in tests of central dopaminergic (DA) activity. The DA activity was evaluatd by means of circling, anticataleptogenic activity, the open-field behavior of rats, and the emetic action of these drugs in dogs. The differences in relative potencies of the compounds used in these tests indicate definite specificity for particular DA structures. Lisuride differs from the er-

goline derivatives in that its effects are mediated not only via DA receptors but via serotoninergic receptors also. VUFB-10915 appears the most suitable prolactin inhibitor, while VUFB-10726 should be useful as an antiparkinson drug without emetic activity. 1 reference.

002541 Duhault, Jacques; Beregi, Laszlo; Roman, Francois. Institut de Recherches Servier, 14 Rue du Val d'Or, F-92150 Suresnes, France **Substituted phenethylamines and anorexia.** Progress in Neuro-Psychopharmacology. 4(4/5):341-349, 1980.

The anorectic effects of various modification of the phenethylamine structure are described and the use of these and other pharmacological tools to study the regulation of food intake is discussed. It is noted that pharmacologically-induced changes in the activity of monoamine systems are associated with pronounced reduction in food intake. While catecholamines may be involved in the anorectic activity of stimulating agents such as amphetamine, the integrity of the serotoninergic system appears to be important for the reduction of food intake induced by the fenfluramine group. The anorectic effect of mazindol seems to depend on both the noradrenergic and dopamiergic systems. However, biochemical information suggests an interaction between the central serotonin and the nigroneostriatal dopamine pathways. Structural modifications in the lateral chain need CF3 group for anorectic activity, while phenoxy substituted amphetamines have no effect on food intake, in spite of mild stimulant properties. 24 references. (Author abstract modified)

002542 Elis, J.; Stika, L. Institute of Pharmacology, Academy of Sciences, Albertov 5, 120 00 Prague 2, Czechoslovakia **Consumption of psychotropic drugs in Czechoslovakia.** Activitas Nervosa Superior. 22(3):224-226, 1980.

Data concerning the consumption of psychotropic drugs in Czechoslovakia are presented for the years 1965-1978. It is noted that use of the classic anxiolytic preparations (meprobamate, guaifenesin, and benactyzine) has not changed since 1965, but that benzodiazepine use has increased quite sharply. It is noted that the most commonly consumed psychotropic drug class is the hypnotics, although hypnotic consumption is very low in comparison with data from other countries. Implications of these data for clinical practice in Czechoslovakia are discussed. 8 references.

002543 Fieve, R. R. New York State Psychiatric Institute, 722 West 168th Street, New York, NY 10032 **/The research for new antidepressants: present orientations./** La recherche pour de nouveaux antidepresseurs: orientations actuelles. Encephale. 5(5, Suppl.):671-688, 1979.

Current directions of research on antidepressant compounds are considered. New compounds are sought which will provide: 1) fewer side-effects, particularly anticholinergic and cardiovascular effects; 2) more rapid onset of action than the 7 to 10 days required of most antidepressants now used; and 3) efficacy in a higher percentage of patients than the 65 to 70% estimated to respond to currently available antidepressant therapies. Compounds now being investigated include: new tricyclics which are unlike those commonly in use; the tetracyclics; the salts of naturally-occurring cations such as lithium and rubidium; and various chemically-unrelated new compounds. Several drugs being tested as anorectics may be promising for future antidepressant drug research. 31 references. (Journal abstract modified)

002544 Freeman, Hugh. University of Manchester School of Medicine, Hope Hospital, Salford, England **Twelve years' experience with the total use of depot neuroleptics in a defined population.** Advances in Biochemical Psychopharmacology. 24:559-564, 1980.

Data on the hospitalization experiences of all schizophrenic patients living in a defined area (in Salford, England) who were treated by depot neuroleptics over a period of 12 1/2 years are described. The data were examined in three ways: 1) predepot neuroleptic vs. postdepot neuroleptic hospitalization experiences; 2) by annual cohorts (to investigate whether or not there is a historical trend in the relationship of hospitalization to depot treatment); and 3) incidence of side-effects. It is concluded that the effective use of depot neuroleptics can significantly improve the long-term experience of schizophrenics providing that a suitable framework of services exists to achieve this. 7 references.

002545 Gaitz, Charles M.; Hartford, James T. Texas Research Institute of Mental Sciences, Houston, TX 77030 **Ergots in the treatment of mental disorders of old age.** Advances in Biochemical Psychopharmacology. 23:349-356, 1980.

The use of Hydergine (a combination of the ergot alkaloids dihydroergocornine mesylate, dihydroergocristine mesylate, and dihydroergocryptine mesylate) in mental disorders of old age is reviewed. Hydergine is indicated primarily for treatment of patients with organic brain syndrome associated with senile dementia of the Alzheimer type of cerebrovascular disease. Although Hydergine does not lead to improvement in all cognitive and affective symptoms associated with these conditions, improvement in mental alertness, anxiety, depression, confusion, and orientation have been reported. Other conditions, such as reversible dementias and pseudodementias, may improve with treatment more specifically aimed at the underlying cause of the mental symptoms. 22 references.

002546 Garattini, Silvio; Goldin, A.; Hawking, F.; Kopin, I. J. Istituto di Ricerche, Farmacologiche, Mario Negri, Milan, Italy **Advances in pharmacology and chemotherapy.** New York, Academic Press, 1979. v. 16. 302 p. $34.

The mechanisms of action of benzodiazepines, which are widely used in treating anxiety, are examined and new evidence is presented which indicates that gamma-aminobutyric acid (GABA) may be the key to the drugs' actions at the biochemical level. Topics include: 1) the historical background of benzodiazepines and neurohumors and comments on ionic movement; 2) the biochemistry of amino acid neurotransmitters and corticosteroids and benzodiazepines; 3) neuropharmacology in peripheral ganglia, spinal cord, cuneate nucleus, cerebellum, and higher brain centers; and 4) psychopharmacology and neuropharmacological aspects of behavior, effects on learning and memory, and social relationships. Concluding comments center on the CNS, behavior, and anxiety, and review of possible mechanisms of action of the compounds.

002547 George, Charles F. University of Southampton, Southampton S09 3TU, England **Clinical pharmacology: drug development.** British Medical Journal. 281(6252):1397-1399, 1980.

Stages in the development of pharmacological agents, from identification to marketing are delineated. Approaches to research and development include the detection of biological activity in a chemical entity, the synthesis and testing of chemical analogues of existing medication, synthesis of a naturally occurring substance (such as a hormone or vitamin), development of analogues of naturally occurring substances, and reinvestigation of traditional, often herbal, remedies. This is followed by preclinical testing in acute, subacute, and chronic animal studies. Clinical studies to establish the agent's effect and side-effects in man: phase 1 studies usually involve administration of minimal dose to volunteers to screen for toxicity and to examine disposition, metabolism, and elimination of the drug; phase 2 studies involve preliminary research, often open, on selected patients

groups; and phase 3 studies involve formal, controlled clinical trials. Once the safety and efficacy of the new drug has been demonstrated, in England, it is submitted for product licensure, and if a product is licensed it may be marketed. 4 references.

002548 Haase, H. J. no address **/Psychopharmaceuticals for treating pain./** Psychopharmaka bei Schmerzbehandlung. Medizinische Monatscrift fur Pharmazeuten. 2:72-75, 1979.

The choice of whether psychopharmaceuticals instead of analgesic drugs should be given for bodily pains with a psychological cause is discussed. In each case, the physician must determine whether or not he is dealing with a psychosis. If so, antidepressant drugs should be prescribed. In schizophrenia various neuroleptic drugs are administered. The central challenge is to determine whether these drugs only fight symptoms or achieve a lasting healing effect. In psychoses, psychotherapy should be viewed as the only solution. For actual pain, the danger of misuse of high. Thus, administration of neuroleptic drugs seems preferable. (Journal abstract modified)

002549 Hartman, Jan. Therapeutic Community of Rynland, Provinciaal Ziekenhuis Santpoort, Brederodelaan 54, Santpoort-Zuid, The Netherlands **Medication: a necessary evil?** International Journal of Therapeutic Communities. 1(2):121-124, 1980.

The place of psychotropic medication within the therapeutic community is considered in terms of the ideology, treatment goals and population served. Three types of therapeutic communities are identified: 1) the supportive community aimed at crisis intervention, relief of symptoms, and resocialization through short-term directive therapies where medication should be considered an inevitable reality for patients who could not otherwise function or benefit from services; 2) the reeducative community, emphasizing patient interactional competence and deemphasizing the sex role and reliance on drugs to solve problems; 3) the drug-free community which views psychotropic medication as a type of addiction; and 4) the reconstructive, psychotherapeutic community, which requires a balanced approach to pharmacotherapy and views too much or too little medication as equally undesirable. 7 references.

002550 Hemminki, Elina; Falkum, Eivind. Dept. of Public Health Sciences, University of Tampere, Tampere, Finland **Psychotropic drug registration in the Scandinavian countries: the role of clinical trials.** Social Science & Medicine. 14A(6):547-559, 1980.

The role of clinical trials in the registration (licensing) of psychotropic drugs in Finland, Norway, and Sweden is described. The number and quality of clinical trials in the applications submitted by the drug industry to control authorities in the years 1965, 1970, and 1974/1975, and the consideration of these applications by the control authorities were investigated. Comparisons with the applications for registration for other drugs showed that the applications for psychotropic drugs were not atypically poor, although in general, efficacy could not have been proved by the documentation included in most applications. Registration seemed easiest in Finland and strictest in Norway. Recommendations include: 1) reevaluation of the efficacy of registered drugs; 2) new registration criteria; 3) an active registration policy; and 4) different resource allocation. 7 references. (Author abstract modified)

002551 Hitchcock, E. R.; Ballantine, H. T., Jr.; Meyerson, B. A. no address **Modern concepts in psychiatric surgery.** Developments in psychiatry, vol. 1. Amsterdam, Elsevier/North Holland Biomedical Press, 1979. 368p.

A collection of 33 papers read at the 5th World Congress of Psychiatric Surgery, held in Boston, MA on August 21-25, 1978, is presented. Various modern concepts in psychiatric surgery are discussed, including biochemical and stimulation studies; epilepsy, personality and the limbic system; target, management, and assessment studies; and social implications of psychiatric surgery. Other topics discussed include: Neurotransmitter mechanisms underlying psychiatric surgery, electroconvulsive therapy, and antidepressive drug therapy; elevation of beta-endorphin-like substances and pro-opiocortin by periaqueductal gray stimulation in humans; brain mechanisms in psychiatric illness; personality studies in surgery for epilepsy; results of separate versus combined amygdalotomy and hypothalamotomy for behavior disorders; psychiatric process analysis of obsessive-compulsive behavior modification by psychiatric surgery; antipsychosurgery attitudes in Sweden.

002552 Holaday, John W.; Loh, Horace H. Dept. of Medical Neurosciences, Div. of Neuropsychiatry, Walter Reed Army Institute of Research, Washington, DC 20012 **Endorphin-opiate interactions with neuroendocrine systems.** Advances in Biochemical Psychopharmacology. 20:227-258, 1979.

The effects of opiates and endorphins on endocrine organs and hormone concentrations are summarized. In general, acute injection of alkaloid opiates increases ACTH, growth hormone, prolactin, and vasopressin but decreases or only slightly alters thyrotropin, luteinizing hormone, and follicle stimulating hormone. Most of these effects are mimicked by endorphins. Hypophysectomy and adrenalectomy enhance opiate potency, and these effects are blocked by ACTH or glucocorticoid pretreatment, respectively. The surgical procedures enhance the development of morphine tolerance but do not alter physical dependence. The endorphins appear to act as neuromodulators and may have a hormonal role. 103 references.

002553 Juillet, P. no address **/Action mechanisms of insulin therapy in psychiatry, and current views on these mechanisms./** Les modes d'action de l'insulinotherapie en psychiatrie, leur perception actuelle. Annales Medico-Psychologiques. 138(3):283-292, 1980.

The general acceptance of insulin therapy in psychiatry was studied. A questionnaire concerning the Sakel treatment and the use of insulin therapy at moderate doses was administered to 150 French and foreign psychiatrists. Results indicate that the Sakel treatment was considered useful by only 43 of the 107 who responded. Only 38 of 104 responses considered insulin therapy viable. It is concluded that due to the ignorance of the psychiatrists concerning insulin therapy, research developments must be better publicized. A discussion follows the main text of the article. 9 references.

002554 Kaymakcalan, Sukru. Ankara University Medical School, Sihhiye, Ankara, Turkey **Similarities between cannabis and opium.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1633-1635).

Pharmacological similarities and interactions between the prinicipal active substances of cannabis and opium are discussed in support of the view that the former can be viewed as a narcotic drug. Delta9-trans-tetrahydrocannabinol, or THC, and morphine are compared for pharmacological properties, (sedation, analgesia, tolerance, and dependence) and similarities are noted in terms of the development of tolerance and physical dependence and cross-tolerance between the analgesic effects of the two compounds. 12 references.

002555 Kennedy, Peter. no address **The use of psychiatric drugs for decades.** British Journal of Psychiatry. 137(October):387-389, 1980.

The adverse effects of long-term administration of neuroleptic drugs in psychiatric disorders are discussed. Such effects include tardive dyskinesia and development of depression in schizophrenics on phenothiazine therapy, as well as the physical damage to body organs caused by lithium therapy for bipolar affective disorder and recurrent mania. 21 references.

002556 Kettenes-van den Bosch, J. J.; Salemink, C. A.; van Noordwijk, J.; Khan, I. Dept. of Organic Chemistry of Natural Products, Organic Chemical Laboratory, State University of Utrecht, Utrecht, The Netherlands **Biological activity of the tetrahydrocannabinols.** Journal of Ethnopharmacology. 2(3):197-231, 1980.

Information on the biological activity of the isomers of (-)-trans-delta1-tetrahydrocannabinol is reviewed. The structure and stereochemistry of the compound are presented, and occurrence and synthesis of isomers are considered. Based on animal studies, information is presented on toxicity; behavioral changes; sleep, pain, and temperature regulation; conditioned learning; EEG activity; distribution in the organism; interaction with neurotransmitters and enzymes; teratogenicity; therapeutic potentials; cytostatic activity; and ophthalmic effects. Dependence liability and development of tolerance in primates are also considered. 163 references.

002557 Kimball, Chase Patterson. University of Chicago Hospitals and Clinics, 950 E. 59th St., Chicago, IL **Non-cooperation: an examination of factors leading to non-compliance in a hypertension clinic.** Psychiatric Journal of the University of Ottawa. 5(4):243-249, 1980.

Commonly presenting elements and factors of patients referred because of difficulty in following treatment protocols for the control of elevated blood pressure were examined. Seven major factors and a number of elements composing these were identified as significant, when matched with a contrasting sample of patients attending the same clinic. Factors identified are: physician-to-patient communication, experienced side-effects of medication, sense of well-being, depression, acceptance of sick role, hearsay, and fear of diagnostic procedures. It is suggested that these factors can assist the physician and his/her staff in identifying the particulate element or factor in noncompliance of the individual patient, which can then be addressed specifically. The extension of this model to other clinics, with appropriate modifications for specific problems, may have similar utility. 16 references. (Author abstract modified)

002558 King, David J. Dept. of Therapeutics and Pharmacology, Queen's University of Belfast, Belfast, Northern Ireland **New development in antidepressant medication -- a review.** Irish Medical Journal. 73(10):366-376, 1980.

Five new antidepressant compounds introduced to the United Kingdom since 1973 (maprotiline, flupentixol, viloxazine, mianserin, and nomifensine) are reviewed separately, their pharmacological properties are considered, and clinical indications are discussed. Implications of their biochemical actions for theories of depression and antidepressant mode of action in general are discussed. Other tropics discussed include: the assessment of efficacy; the value of measuring plasma levels of antidepressant drugs; and the safety of these drugs in relation to tricyclic antidepressants and electroconvulsive therapy. 85 references. (Author abstract modified)

002559 Kitamura, T.; Mizuguchi, R.; Hara, T. Dept. of Psychiatry, University of Birmingham, Birmingham, England **The change of blood prolactin level due to the withdrawal of maintenance neuroleptics.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 711-713).

Thirteen chronically institutionalized (12 of whom were schizophrenic) male psychiatric patients were studied for change of blood prolactin (PRL) level due to withdrawal of maintenance neuroleptics. Blood levels of PRL, luteinizing hormone, follicle stimulating hormone, growth hormone (GH), thyrotropin, serotonin, immunoreactive insulin, glucose, free fatty acids, and triglyceride were estimated, and a 50g glucose tolerance test was done before and after the drug holiday. No changes occurred after withdrawal except with PRL and GH. PRL was normal before withdrawal and fell to the lower limit of the normal range after withdrawal. More GH was released in the glucose tolerance test after withdrawal. The concept of hypersensitivity of the CNS (particularly tuberoinfundibular dopaminergic system) is consistent with the findings. 6 references. (Author abstract modified)

002560 Kline, Nathan S. Rockland Research Institute, Orangeburg, NY 10962 **Classification of drugs and patients to achieve maximum therapeutic response.** Progress in Neuro-Psychopharmacology. 4(4/5):491-494, 1980.

Methodological and clinical issues concerning the classification of drugs and patients to achieve maximum therapeutic response are reviewed. It is noted that classifications of drugs are appropriate for specific purposes and inappropriate for other purposes; examples of biochemical, pharmacological, and psychotherapeutic classifications are discussed. Achieving maximum therapeutic response requires both drug and patient classifications which are oriented toward therapeutic response. Improvements in the classification of drugs are proposed and the diagnosis by syndrome system of Kline and Angst (1979), a system based on therapeutic responsivity, is described. 2 references. (Author abstract modified)

002561 Kohnen, R.; Lienert, G. A. Fachbereich Erziehungs- und Kulturwissenschaften, Universitat Erlangen-Nurnberg, Regensburger Str. 160, D-8500 Nuremberg, West Germany **/Free description of drug effects as a method of clinical trial, presented by the example of pentobarbitone, promazine and their combination./** Die Freie Wirkungsbeschreibung (FWB) als Methode der klinischen Prufung. Dargestellt am Beispiel von Pentobarbital, Promazin und ihre Kombination. Arzneimittel-Forschung. 29(3):579-584, 1979.

Free description of drug effects is suggested as a method by which subjects or patients describe spontaneously the effects of psychotropic drugs from their own experience with their own verbal concepts. The method is exemplified by examining pentobarbitone, promazine, and their combination (Norkotral). The results of the free description method have psychological, as well as psychopharmacological, plausibility. It is suggested that the method should be implemented as a new means of clinical research in psychopharmacology. 10 references. (Journal abstract modified)

002562 Komenda, S.; Macakova, J.; Hrbek, Jan; Luks, A. Dept. of Medical Biophysics and Nuclear Medicine, Palacky University, Olomouc, Czechoslovakia **Structure of variability and correlation in learning after drug administration.** Activitas Nervosa Superior. 22(3):187-188, 1980.

Psychometric implications of the repeated measures which are inherent in most paradigms for measuring the effect of a drug on learning are discussed. It is noted that drug administration can vary not only mean level of performance but also variability of performance. A procedure for evaluating drug effects on performance level which is uncontaminated by drug effects on variability is described.

002563 Koupernik, C. Hopital Americain de Paris, B.P. 109, F-92201 Neuilly, France **/The clinician's role in**

psychopharmacological research./ Le role du clinicien dans la recherche psychopharmacologique. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1416-1420).

The role of the clinical psychiatrist in psychopharmacological research is discussed. Traditionally, the means of pharmacological discovery have been: modification of a known molecule; clinical verification of the effects of a new molecule; and chance (penicillin, IMAO). Presently many psychiatrists have been using medications such as antihypertensives and antimitotics with varied psychotropic effects. Their evaluations have been subjected to rigorous examination, especially concerning the mechanisms of observed mental disturbances, but their attitude toward the medication has proved essential. 3 references. (Author abstract modified)

002564 Krzysko, Krystyna; Wichlinski, Leslaw M. CMKP, ul. Debowa 3, 85-626, Bydgoszcz, Poland **Pharmacokinetics and bioavailability of chlordiazepoxide in humans.** Materia Medica Polona. 11(1):15-18, 1979.

The pharmacokinetics and bioavailability of chlordiazepoxide, which is marketed as the active ingredient in Elenium and Librium and used as a psychotherapeutic drug, was investigated, using serum concentrtion data. Comparative bioavailability of Elenium and Librium was studied after intramuscular administration of a single 50mg dose. Results were calculated using the program in Algol-60 Language for Polish digital computer ODRA-1204. 20 references (Author abstract modified)

002565 Kubacki, Andrzej Regional Mental Health Clinic, Bathurst, New Brunswick, Canada **Some odd patterns of psychotropic self-medication.** Canadian Medical Association Journal. 123(7):606-607, 1980.

The need for individual tailoring of the dosage involved in self-medication of psychotropic drugs is discussed. It is contended that complexities and intricacies of metabolism and interactions of various drugs necessitate such considerations. Observations are briefly reported from patient self-reports on the use of cyproheptadine hydrochloride as a hypnotic, bedtime and daytime use of benzodiazepine tranquilizers and of other nonbarbiturate hypnotics, the use of chlorpromazine in cases of depression, and the use of antipsychotic medication by schizophrenics. 5 references.

002566 Kuhar, Michael J.; Uhl, George R. Dept. of Pharmacology, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Histochemical localization of opiate receptors and the enkephalins.** Advances in Biochemical Psychopharmacology. 20:53-68, 1979.

The use of light microscopic histochemistry to localize opiate receptors and opioid peptides is described. Autoradiographic studies of specific 3H-diprenorphine binding have revealed opiate receptors in anatomical areas associated with opiate sensitive physiologic functions, as well as in other areas. Opiate receptors appear to be localized on axons and nerve terminals; some of these are probably for axo-axonic synapses in glomeruli. The autoradiographic results have been supported by some but not all electrophysiological studies. Immunohistochemical studies indicate that the distribution of enkephalin containing neurons is often but not always similar to that of opiate receptors. 49 references.

002567 Kutt, Henn; McDowell, Fletcher; Masur, Henry; Murray, Henry W. no address **Clinical neuropharmacology.** New York, Churchill Livingstone, 1979. 213 p. Vol. 4. $22.50.

The treatment of selected disorders of the central nervous system including seizures, extrapyramidal syndromes, vascular diseases, myasthenia, multiple sclerosis, and infections of the nervous system, is examined. Other topics discussed include: treatment of head pain, nervous system complications, vitamin deficiencies, malignant gliomas, and drug-induced disorders. Important principles of pharmacokinetics, pharmacodynamics, and pharmacogenetics are treated, along with the importance of blood levels of drugs used in therapy.

002568 Langer, G. Dept. of Psychiatry, University of Vienna School of Medicine, Vienna, Austria **The hypothalamic dopaminergic regulation of prolactin: a model for the study of neurohormonal mechanisms in man.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 699-704).

Neuroendocrinological and pharmacological studies of normal young men and schizophrenic patients are reviewed to demonstrate support for the view that lactotrophic cells of the pituitary gland may serve as a reliable and valid model for studying neurohormonal (particularly dopaminergic) mechanisms in man. It is reported that: 1) human plasma prolactin (PRL) concentration may be increased reliably by administration of a neuroleptic (NL) drug; 2) the increase is dose-related and highly reproducible within a S; 3) a small dose of a NL may significantly elevate PRL levels, while a dose well below the regimen given to treat schizophrenics induces maximal PRL response; 4) the relative potencies of seven NLs in releasing PRL in man and in treating acute schizophrenic patients are highly correlated; and 5) the pituitary's lactotrophic cells are the locus of action of NLs in releasing PRL in stalk sectioned monkeys and in normal men. 15 references. (Author abstract modified)

002569 Langer, S. Z.; Briley, M. S.; Raisman, R. Dept. of Biology, Synthelabo-LERS, F-75013 Paris, France **Regulation of neurotransmission through presynaptic receptors and other mechanisms: possible clinical relevance and therapeutic potential.** Advances in Biochemical Psychopharmacology. 21:203-212, 1980.

The possible clinical relevance and therapeutic potential of the regulation of neurotransmission through presynaptic receptors and other mechanisms are described. Topics discussed include: presynaptic autoreceptors and regulation of neurotransmission; modulation of the release of neurotransmitters through other presynaptic receptor systems; development of subsensitivity in the presynaptic inhibitory autoreceptors; and specific high affinity binding sites for tricyclic antidepressants in the rat brain. It is noted that in the analysis of the overall pharmacological and therapeutic effects of drugs both presynaptic and postsynaptic effects must be considered. The recent demonstration that the benzodiazepine receptor can modulate the activity of the GABA receptor and that GABA can modify the properties of the benzodiazepine receptor, encourages speculation on the possibility that noradrenergic transmission may be modulated through a specific receptor system with a recognition site for molecules like tricyclic antidepressants. 40 references.

002570 Lavarenne, J. Lab. de Pharmacologie Medicale, Faculte de Medecine, boulevard Winston-Churchill, F-63001 Clermont-Ferrand Cedex, France **/Classification of analgesics./** Classification des analgesiques. Psychologie Medicale. 11(5):1001-1005, 1979.

The classification of analgesics, drugs which ease or eradicate pain without treating the cause is discussed. These drugs are usually divided into two groups: major analgesics (or central or narcotic analgesics) and minor (or peripheral) analgesics. The major analgesics have pharmacological properties other than their analgesic action, such as a depressant effect on respiration and a psychodysleptic action. Because of this their use is restricted to cases of intense pain and pain that resists all other

therapy. The minor analgesics are characterized by an absence of psychotropic effect and of respiratory depression. They frequently have antiinflammatory and antipyretic effects. Tricyclic antidepressants comprise a third group. These drugs have an analgesic effect which cannot be attributed to their psychotropic action alone; it is probably due to a symptomatic action. 4 references. (Journal abstract modified)

002571 Leguay, Denis; Lhuillier, Jean-Paul; Garre, Jean-Bernard. Centre Psychotherapique, F-49470 Sainte-Gemmes-sur-Loire, France **/Methodological considerations concerning the prescription and use of so-called** Considerations methodologiques sur la prescription. A propos de l'emploi de Psychologie Medicale. 12(B):57-61, 63, 64, 1980.

Epistemological problems concerning the prescription of psychotropic drugs in general and disinhibiting drugs in particular are discussed. The concept of inhibition is analyzed, particularly in terms of its validity in psychopathology. The effects of disinhibiting drugs are explained by analogy with antidepressants. It is concluded that disinhibiting drugs should be used preferably for treatment of neurotic conditions; it is not desirable and perhaps dangerous to use them in cases of schizophrenic psychoses. A discussion with D. Leguay follows the text of the article. 8 references. (Author abstract modified)

002572 Lehmann, Heinz E. Dept. of Psychiatry, Div. of Psychopharmacology, McGill University, Montreal, Quebec, Canada **Drugs of the future.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 852-866).

Current progress and anticipated future developments in the use of psychotropic drugs to treat a variety of mental disorders is reviewed. Improvements are expected in the areas of: 1) antipsychotic drugs (avoidance of extrapyramidal symptoms and tardive dyskinesia, reversal of learning impairment, reduction of autonomic side-effects, and improvement of long-acting drugs); 2) antidepressants (increased effectiveness, decreased time lag, and fewer autonomic side-effects and drug interactions); 3) anxiolytic drugs; and 4) hypnotics. Future developments in clinical pharmacokinetics and pharmacodynamics will reflect better knowledge of drug metabolism in the brain, develop drugs that can effectively deal with the primary etiological factors of the principal functional psychiatric diseases (schizophrenia and affective disorders), emphasize the use of beta endorphins, yield an improved euphoriant, and utilize a new class of drugs termed nootropic substances. 12 references.

002573 Levenson, A. J. no address **Neuropsychiatric side effects of drugs in the elderly. Vol. 9, Aging.** New York, Raven, 1979. 240 p. $22.00.

The effects of drugs on the central nervous system of elderly patients are discussed, including wide ranges of medical treatment and reasons for the selection of medications. Steps in neurotransmission that can be altered by medications, the relation of hypertension to neurotransmitters, and the side-effects of antihypertensive drugs are described. There is a need to identify drug levels such as digoxin by creatinine clearance as a sound basis for dosages. Descriptions of medications used in a number of physiologic and pathologic conditions in the elderly are included.

002574 Levine, Jerome. Psychopharmacology Research Branch, NIMH, 5600 Fishers Lane, Rockville, MD 20857 **Coordinating clinical trials in psychopharmacology: planning, documentation, and analysis.** Washington, DHEW Pub. No. (ADM) 79-803, 1979. 170 p.

Techniques to reach conclusions about a drug's efficacy, safety, and role based on data generated from independent clinical trials are discussed. Chapters include: planning a coordinated set of clinical trials, documentation of early phase II trials, documentation of late phase II and phase III trials and the research completion report, general linear model analysis of variance, combining data from studies with multiple outcome criteria, the application of log linear models to the analysis of cross-classification data generated by single and multiple drug trials, and models for combining summary statistics from independent drug trials.

002575 Mackay, A. V. P.; Bird, E. D.; Iversen, L. L.; Spokes, E. G.; Creese, I.; Synder, S. H. MRC Neurochemical Pharmacology Unit, Medical School, New Addenbrooke's Site, Cambridge, England **Dopaminergic abnormalities in postmortem schizophrenic brain.** Advances in Biochemical Psychopharmacology. 24:325-333, 1980.

Dopaminergic abnormalities in postmortem schizophrenic brain were investigated. Results suggest that patients dying with a case note diagnosis of schizophrenic illness have abnormally high dopamine (DA) concentration in two areas of limbic forebrain. They also appear to have an increased number of DA receptors and decreased receptor affinity in both nucleus accumbens and caudate nucleus. It is noted that the central issue in the interpretation of these dopaminergic abnormalities is whether they are associated with the psychotic disease process or with environmental artifacts such as chronic neuroleptic medication or agonal state. The maximum number of DA receptors defined by 3H-spiperone binding was significantly increased in both the nucleus accumbens and caudate. 17 references.

002576 Maillard, M.; Tholose, A. no address **/Present indications of long-acting neuroleptics./** Les indications actuelles des neuroleptiques d'action prolongee. Annales Medico-Psychologiques. 138(3):370-375, 1980.

The indications for the use of long-acting neuroleptics are outlined. These drugs are used primarily in schizophrenic or paranoid patients, in some alcoholics, in some manic-depressives, and in certain epileptics with aggressive tendencies. For each of these illnesses, particulars of the use of long-acting nueroleptics are presented, including: effective dosage, preferred route of administration, side-effects, and effects on the presenting symptomatology. 6 references.

002577 Marie-Cardine, Michel. Hopital du Vinatier, Centre Hospitalier Specialise, 95, boulevard Pinel, F-69677 Bron Cedex (Rhone), France **/Placebo, medicine and pain, or the relative function of medication in the treatment of pain./** Placebo, medicament et douleur ou la fonction relationnelle du medicament dans le traitement de la douleur. Psychologie Medicale. 11(5):1007-1012, 1979.

Psychological aspects involved in the roles which medication and placebos play in the treatment of pain, particularly functional pain, are examined. Three clinical cases illustrate the doctor-patient relationship as a society of mutual investment and mutual narcissism. The transference and countertransference involved in the relationship of mutual investment is often of an unconsciously homosexual nature. Medicine or placebo plays a mediating role and is a means of symbolic realization. The physical contact involved in administering medicine leads to intense psychological and affective contact. The placebo effect (the psychological effect) is conceived as a receptacle for the interconnected fantasies of both physician and patient. It is contended that this placebo effect is so closely interwoven with pharmacological effects that medical and placebo aspects can never be found separately and in a pure form. 5 references.

002578 McIlwain, Henry. Dept. of Biochemistry, Institute of Psychiatry, De Crespigny Park, Denmark Hill, London SE5 8AF, England **Pursuing the actions of psychotropic drugs: receptor sites and endogenous cerebral program.** Psychological Medicine. 10(3):399-402, 1980.

Theories and research concerning the mechanisms of action of psychotropic drugs are reviewed along with the nature of the compounds with which neuroleptics interact at their receptors. Creese (1978) has investigated extracellular receptor binding sites as a means of providing biochemical points of action for psychotropic drugs in electrophysiological, pharmacological, and behavioral studies. The findings suggest a connection between schizophrenic symptoms and certain aspects of animal behavior, without indicating how this comes about. The study of intracellular and extracellular receptor sites, of receptor controlled products and of their translocation, offer vantage points for discernment of behavioral mechanisms and of potential therapeutic approaches. Work in the area of endogenous cerebral programs is also assessed. 24 references.

002579 Melville, Arabella. Medical Sociology Research Centre, University College of Swansea, Park Buildings, Park Street, Swansea, SA1 3DJ, England **Job satisfaction in general practice: implications for prescribing.** Social Science & Medicine. 14A(6):495-499, 1980.

The hypothesis that low job satisfaction among general practitioners may be associated with poor quality prescribing was investigated. One hundred and twenty-four general practitioners in England and Wales responded to a questionnaire which included items concerned with aspects of job satisfaction. A record of all prescriptions written during 1 month was also available for this sample of physicians. The data were used to produce a reliable job satisfaction scale, the scores on which were then related to the prescribing of certain drugs which were selected as possible indicators of dysfunctional prescribing. Results indicate that prescription of drugs prone to cause adverse reactions, or which are deemed inappropriate by medical consensus, is associated with low job satisfaction as measured by the scale. Implications for selection and training of general practitioners are discussed. 41 references. (Author abstract modified)

002580 Miller, Richard J.; Cuatrecasas, Pedro. Dept. of Pharmacological and Physiological Sciences, University of Chicago, Chicago, IL 60637 **Neurobiology and neuropharmacology of the enkephalins.** Advances in Biochemical Psychopharmacology. 20:187-225, 1979.

The distribution and pharmacology of enkephalins are reviewed. All areas of rat brain examined so far that contain met5-enkephalin also contain leu5-enkephalin, although the ratio of the two peptides differs a great deal from area to area. Studies of enkephalin analgesia, tolerance and withdrawal, endocrine effects, electrophysiological effects, and conformation are discussed. Nine features that have been observed in the structure-activity relationships of enkephalin analogs are presented. Suggestions for future study of the enkephalins and other peptide hormones are offered. 166 references.

002581 Moussaoui, D. Service Hospitalo-Universitaire de Psychiatrie, Hopital d'Averroes, Casablanca, Morocco **/Respective position of antidepressants in therapeutics./** Place respective des differents antidepresseurs en therapeutique. Encephale. 5(5, Suppl.):701-708, 1979.

In considering the use of antidepressants in treatment, the heterogeneity of depressions and antidepressants is noted, as is the need for finding predictive indicators of antidepressant activity. It is suggested that genetic, demographic, biological, biochemical, and pharmacokinetic factors can help to determine which antidepressant to prescribe. 49 references. (Journal abstract modified)

002582 Nandy, Kalidas. Geriatric Research, Education and Clinical Center, Veterans Administration Medical Center, Bedford, MA 01730 **Geriatric psychopharmacology.** Developments in neurology, vol. 3. New York, Elsevier/North-Holland, 1979. 277 p.

Three areas of geriatric psychopharmacology are reviewed: the mode of action of drugs and pharmacokinetics; the evaluation of the patients and proper drug therapy including indications and contraindications; and the newer groups of psychoactive drugs. Issues covered include: alterations in brain neurotransmitter systems related to senescence; age-related factors affecting antidepressant drug metabolism; age-related change in the pharmacokinetics of some psychotropic drugs; neurological evaluation of geriatric patients with dementia and related disorders; sleep and aging; treatment of common psychiatric disorder in the elderly; polypharmacy and drug-drug interactions; depression depletion, and dementia; psychiatric side-effects of antiparkinson drugs; ergot derivatives; dihydroergotoxine in senile cerebral insufficiency; ergot alkaloids in the treatment of geriatric patients with dementia; cholinergic agents in senile dementia; gerovital H3 in the treatment of depression; the effect of centrophenoxine in the aging brain; and the effects of centrophenoxin on cerebral circulation in geriatric patients.

002583 no author. no address **Federal court upholds right to refuse psychotropic drugs, orders improvements at Lima State Hospital.** Mental Disability Law Reporter. 4(6):396-398, 1980.

New orders issued by a federal district court in Ohio concerning the conditions at Lima State Hospital are reviewed. Questions about staffing, the physical environment, seclusion, restraint, and the right to refuse antipsychotic medication were decided in this most recent opinion. The court's discussion of forcible drug use is examined. The court ruled that the state may not administer psychotropic drugs without the informed consent of the competent patient unless the patient presents a danger to himself or others in the institution. The court's further ruling that, except in an emergency where the patient presents an immediate danger to himself or others, the patient is entitled to a due process hearing before a neutral factfinder is also reported. (Journal abstract modified)

002584 no author. no address **Guidelines for the clinical evaluation of analgesic drugs.** Pharmakopsychiatrie Neuro-Psychopharmakologie. 13(6):344-350, 1980.

The use of global evaluations and other objective measures to assess the treatment effects of analgesic drugs is briefly described and alternative approaches and pain models are identified. Use of the double-blind technique, restrictions on concomitant medication, and the gathering of side-effect information are discussed. Studies in particular patient populations (those with postoperative pain, postpartum pain, chronic pain, headache, and experimentally-induced pain) are cited. Other topics include the relationship of analgesic blood levels and efficacy, analgesic drug combinations, and phase 3 trials to assess the effectiveness of the recommended dosage schedule and to predict the usual side-effects, and special studies of drug dependence liability. 15 references.

002585 no author. no address **/Roundtable discussion: Alival's place in psychiatric practice./** Table ronde: place de l'Alival en pratique psychiatrique. Psychologie Medicale. 12(C):101-115, 1980.

Reports of small group discussions on experimental trials with nomifensine (Alival) are given. The subjects discussed include

indications for use, advantages, long-term effects, dosages, and applicable symptoms. Reports also are given on the use of nomifensine in the geriatric patient; its use with the alcoholic; and the use of nomifensine alone vs. in conjunction with clobazam.

002586 no author. no address **Psychopharmacology -- an area of research to improve mental health care.** WHO Chronicle. 34(12):465-469, 1980.

Activities coordinated by the World Health Organization in the field of psychopharmacology are reviewed. The organization has established a network of International Reference Centres in Psychopharmacology, and 25 centers now share and exchange information on the effectiveness and safety of psychotropic drugs and also promote multidisciplinary research and training. Areas of interest include population and cultural differences in treating the mentally ill, and dose effects of psychotic drugs in different populations, including antidepressants, antipsychotics, and minor tranquilizers (benzodiazepines). It is contended that such an approach will provide standards and guidelines for the psychopharmacological treatment of the major mental disorders (schizophrenia, depression, and anxiety) in different regions of the world.

002587 no author. AV/MD, Dept. B-0979, 850 Third Avenue, New York, NY 10022 (212-421-6900). **Hallucinogens.** Slide or cassette color sale 1979 multi-media

Presents a comprehensive course on the sources, chemistry and psychopharmacology of the true and minor hallucinogens, including the clinical effects of acute and chronic abuse patterns. Shows how exploration of structure/activity relationships of these drugs by classes, metabolism and pharmacology has produced proof of endogenous hallucinogens, as well as the discovery of a new class of LSD blockers. Illustrates with chemical structures, receptor/activity drawings, and molecular models Smythies' theory on the structure of neurotransmitter receptors appropriate for academic audiences. Multi-media kit includes, in addition to a cassette and 66 color slides, a study guide. (Journal abstract modified)

002588 Obiols, J.; Ballus, C.; Gonzalez Monclus, E.; Pujol, J. Ballus: Depto. de Psiquiatria, Facultad de Medicina, Barcelona, Spain **Biological psychiatry today -- vol. B.** Developments in psychiatry, vol. 2. Amsterdam, Elsevier/North Holland Biomedical, 1979. 835 p.

The 151 papers concerning aspects of biological psychiatry, presented at the Second World Congress on Biological Psychiatry (which was held in 1978 in Barcelona, Spain) are provided. The psychopharmacology section includes the following topics: psychopharmacology and circulation; clinical and experimental perspectives in psychopharmacology; drug interaction in psychopharmacology, plasma levels and clinical response of neuroleptics, antidepressants and other drugs; mechanism of action of benzamides; nomifensine (neurochemical and clinical aspects); long-term treatment of chronic psychosis; and lithium salts (clinical contributions and lithium transport in affective disorders). Studies concerning nonpharmacological therapies (electroconvulsive, relaxation training, biofeedback and other therapies), aggressivity, interhemispheric differences in psychiatry, applied neurophysiology (EEG, computer EEG in psychiatry, and evoked potentials), and miscellaneous topics on other methodologies, techniques and aspects of biological psychiatry are also presented.

002589 Obiols, J.; Ballus, C.; Gonzalez Monclus, E.; Pujol, J. no address **Biological psychiatry today -- vol. A.** Developments in psychiatry, Vol. 2. Amsterdam, Elsevier/North Holland Biomedical Press, 1979. 817 p.

A collection of 33 papers read at the 2nd World Congress on Biological Psychiatry meeting held from August 31 to September 6, 1978, in Barcelona, Spain, is presented. Topics discussed in these papers include: genetics and psychiatry; studies on the HLA antigen system; receptor mechanisms in the central nervous system; neurotransmitter systems in CNS; cyclic nucleotides in psychiatry; behavior, memory traces and new protein synthesis; limbic system; biological rhythms and psychopathology; biology of schizophrenia; pathogenesis of schizophrenia; cholinergic and GABA system theories of the etiology of schizophrenia; experimental and clinical studies of depression; obsessive-compulsive disorders; anorexia nervosa; dementia; tardive dyskinesia; hyperkinesis; psychoneuroendocrinology; and endorphins and enkephalins.

002590 Ohman, R.; Forsman, A.; Axelsson, R. Psychiatric Dept. III, Lillhagen's Hospital, University of Goteborg, S-422 03 Hisings Backa, Sweden **Clinical aspects on prolactin response to neuroleptic drugs.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 730-734).

Evidence is presented that the prolactin (PRL) response to thioridazine and haloperidol increases with the dose or serum concentration of the drug, but finally reaches a constant level. For the individual patient, a close correlation was found between antipsychotic effect and PRL at various doses of neuroleptic drugs when a steady-state situation was reached. On normalization of PRL and clinical rating data, a similar trend was also seen in a group of patients. A theoretical kinetic analysis was performed to express the relationship between PRL response or dose and serum concentration of the drug. Clinical data were compatible with this analysis. It is suggested that the derived equations may be used to predict PRL serum levels following a given dose of a dopamine receptor blocking drug. If such a relationship between PRL response and antipsychotic effect can be further established, the equation may also be used in predicting optimal antipsychotic medication in certain patients. 14 references. (Author abstract modified)

002591 Pina, A. Martinez; i Vallverdu, R. Fuste; Irache, Eduardo; Castello, Eulalia. Dept. of Psychiatry, Valle Hebron Hospital, Barcelona, Spain **Patterns of use in the intake of oral medication.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 919-923).

Patterns of use in the intake of oral psychotropic medication were examined from questionnaire responses of 257 psychiatric outpatients. A total of 72.3% of the Ss reported taking the medication as prescribed, but 78.5% admitted taking other medication which was not prescribed for such symptoms as headache, tiredness, and nervousness. Dependence on medication was reported by 61.8%, and the degree of dependence correlated with reported rates of sick leave from work. The need for physicians to abandon assumptions of short-term cure and to followup the improvement or deterioration of patients in the long run is discussed.

002592 Plotkin, Mark J.; Mittermeier, Russell A.; Constable, Isabel. Yale School of Forestry and Environmental Studies, 205 Prospect Street, New Haven, CT 06511 **Psychotomimetic use of tobacco in Surinam and French Guiana.** Journal of Ethnopharmacology. 2(3):295-297, 1980.

The use of a tobacco ash mixture among the Creoles of French Guiana and Bushnegroes of Surinam are considered. Observations were made primarily in Kaw, in northeastern French Guiana and around the capital city of Cayenne, and supplementary information was gathered in Surinam from forest laborers and researchers. Preparation of the drug and the sensation pro-

duced on a user unaccustomed to tobacco are described. 3 references.

002593 Poe, William D.; Holloway, Donald A. no address **Drugs and the aged.** Hightstown, NJ, McGraw-Hill Book, 1980. 209 p. $8.95.

A clear, nontechnical primer in pharmacology is presented for a general audience, with great relevance for those who must evaluate the physical and mental health of the aged. Included are how drugs work, the effects of both prescription and over-the-counter drugs, and an index of drugs. Particular attention is paid to drugs that act upon the central nervous system. The role of the pharmacist in cutting down drug costs and averting potentially dangerous drug interactions is also discussed, as well as pharmacy practice in a retirement community, in the nursing home, and in long-term care facilities.

002594 Popovic, Milan; Sedmak, Tomislav. Institut za mentalno zdravlje, Belgrade, Yugoslavia **/Dynamics and prospects of the psychotherapy and psychopharmacotherapy relationship./** Dinamika i perspektive odnosa psihoterapije i psihofarmakoterapije. Socijalna Psihijatrija. 7(4):369-374, 1979.

The dynamics of the relationship between psychotherapy and psychopharmacotherapy are examined, with emphasis on large variations encountered in treatment of psychoses versus neuroses. The effects of pharmacotherapy are nevertheless always present with both the psychological and social contexts. In view of this, the patient should be approached as a human being in his entirety, taking into account his biological, psychological, and social aspects. It is important for delivery personnel to learn the evaluation methods and outcome of both psychotherapy and psychopharmacotherapy, since this would lead to greater understanding and confidence of the two. 4 references. (Journal abstract modified)

002595 Pullen, Geoffrey. Littlemore Hospital, Littlemore, Oxford, England **Communal medication.** International Journal of Therapeutic Communities. 1(2):125-127, 1980.

The place of psychoactive medication within the therapeutic community is discussed with reference to medication policies at Street Community in England. Three purposes of the use of psychotropics are identified: to make life more bearable to the patient; to make the patient more bearable for others; and to make the prescriber feel therapeutically potent and of value (this last use is rejected as an abuse of medication). In the Street Community, when physical violence of a resident becomes unbearable to the community, a crisis meeting is called and the community may decide to discharge the offending individual or to temporarily sedate him. If the latter option is chosen, it is made clear that the decision is made for the benefit of the community and members of the community share in the procedure as they would in any other. This use of sedation is viewed by the community as a democratic and communal response to the reality of having to decide limits which are not in conflict with adherence to therapeutic community principles of democraticization, permissiveness, communalism, and reality confrontation. 9 references.

002596 Radouco-Thomas, Simone; Garcin, Francoise; Denver, Donald; Gaudreault, Vital; Radouco-Thomas, Corneille. Unite RADA, D7, Hopital St. Francois d'Assise, 10 rue de l'Espinay, Quebec G1L 3L5, Canada **A possible neuropsychopharmacology aspects in alcoholism and pharmacodependence.** Progress in Neuro-Psychopharmacology. 4(3):313-315, 1980.

The importance of an ecopharmacogenetic approach in psychopharmacology, and specifically, in alcoholism and substance dependence, is discussed. The term ecopharmacogenetic refers to studies of genetically determined differences among individuals in their susceptibility to the specific action of pharmacological agents in a given environment. This model allows alcoholism and substance dependence to be interpreted as an integrated biopsychosocial and pharmacogenetic disorder. Implications of this concept for research design and treatment are noted. 12 references. (Author abstract modified)

002597 Rafaelsen, Ole J. Psychochemistry Institute, Rigshospitalet, Copenhagen, Denmark **The teaching of psychopharmacology.** Handbook of Biological Psychiatry. Part 1:359-365, 1979.

Issues concerning the teaching of psychopharmacology are reviewed, and the need for psychopharmacology education is discussed in relation to drug prescribing patterns in developing and developed countries. It is noted that the major part of a general practitioner's psychopharmacology education is provided by drug manufacturers and their sales representatives, and that the quality of this informaton is best in those countries which have taken steps to insure accurate presentation of information. The need for medical personnel in developing nations to evaluate the claims of aggressive drug companies for their products is noted. 10 references.

002598 Rees, Myrddin; Dormandy, John. Dormandy: St. Jame's Hospital, Sarsfield Road, London SW12, England **Accidental intra-arterial injection of diazepam.** British Medical Journal. No. 6235:289-290, 1980.

Cases of two patients who suffered serious injury from the accidental injection of diazepam into an artery are described, and suggestions on how to manage such an accident are offered. Accidental intraarterial injection of diazepam causes pain that radiates distally, but clinical signs of ischemia and gangrene may not occur for days. 10 references.

002599 Rossier, Jean; Bloom, Floyd. Arthur Vining Davis Center for Behavioral Neurobiology, Salk Institute, San Diego, CA 92112 **Central neuropharmacology of endorphins.** Advances in Biochemical Psychopharmacology. 20:165-185, 1979.

The reported effects and proposed mechanisms of action of beta-endorphin are reviewed, with reference to neurochemical, electrophysiological, and behavioral research. The cellular localization of endorphins in the pituitary and brain and the regional separation of beta-endorphin and enkephalin are described. The apparent difference between central and peripheral endorphin is discussed in relation to the role of beta-endorphin and other peptides in the treatment of mental illness. 92 references.

002600 Roux, J.-M.; Benyacoub, A.; Perron, J.-L.; Hantzberg, P.; Mortier, L.; Quinquis, M.-N. Hopital Sainte-Anne, 100, rue de la Sante, F-75014 Paris, France **/The treatment of opiate addiction using methadone chlorhydrate./** Le traitement des pharmacodependances aux opiaces par le chlorhydrate de methadone. Neuropsychiatrie de l'Enfance et de l'Adolescence. 28(7-8):285-289, 1980.

The use of methadone chlorhydrate in the treatment of opiate addiction is discussed. Pharmacologically, methadone chlorhydrate is related to the opiates; its characteristics make it a useful and convenient drug among the alternative treatments available for opiate addicts. Its use requires regulation of prescriptions, daily distribuition, and control of associated opiate consumption by means of daily laboratory examinations of the urine. The indications depend on a number of factors; schedules for short-term, medium-term, and long-term cures are presented. A restricted number of care centers accepting a limited number of patients enables any extratherapeutic use of methadone to be avoided. In a hospital ward, this method constitutes a new form

of chemotherapy used alongside other biological and psychotherapeutic treatments. 8 references. (Journal abstract modified)

002601 Saavedra, Juan M. Section on Pharmacology, Laboratory of Clinical Science, NIMH, Bethesda, MD 20205 **Beta-phenylethylamine, phenylethanolamine, tyramine and octopamine. (Unpublished paper).** Bethesda, MD, NIMH, 1980. 131 p.

The distribution, physiology, pharmacology, and biological importance of beta-phenylethylamine, phenylethanolamine, tyramine, and octopamine are reviewed. The data on these biogenic amines include: methods of identification; distribution; uptake, storage, and release; metabolism; effects of drugs on tissue levels; pharmacological actions; and function in pathological states. 346 references.

002602 Samanin, Rosario; Mennini, Tiziana; Garattini, Silvio. Istituto de Richerche Farmacologiche Italy **Evidence that it is possible to cause anorexia by increasing release and/or directly stimulating postsynaptic serotonin receptors in the brain.** Progress in Neuro-Psychopharmacology. 4(4/5):363-369, 1980.

Recent pharmacological and biochemical data on the role of brain serotonin in the anorectic activity of some drugs are reviewed. Quipazine and meta-chlorophenylpiperazine, two displacers of serotonin binding to brain membranes, caused powerful anorexia in rats. This effect was prevented by methergoline, a central serotonin antagonist, but not by various procedures known to interfere with brain catecholamines. LM-5008, a potent and specific inhibitor of serotonin neuronal uptake, did not significantly change food intake. Since, unlike fenfluramine, this compound does not markedly increase serotonin release nor does it act as an agonist at postsynaptic receptors, as quipazine and meta-chlorophenylpiperazine do, it is suggested that increased serotonin release and/or direct stimulation of postsynaptic receptors play a more important role than uptake inhibition in the anorexia induced by drugs acting on brain serotonin. 42 references. (Author abstract modified)

002603 Schiele, Burtrum. University of Minnesota, Faculty of Medicine, Minneapolis, MN 55455 **/Therapeutic profile of haloperidol./** Perfil terapeutico del haloperidol. Acta Psiquiatrica y Psicologica de America Latina. 26(1):72-76, 1980.

The therapeutic use of haloperidol is examined. This drug has been shown to be very effective, especially in the Gilles de la Tourette syndrome and in acute schizophrenia. Haloperidol is also effective in a wide variety of disturbances with symptoms such as anxiety, hyperactivity, and destructive behavior. After 13 years' extensive research on the drug, previously feared adverse effects (hypotension, sedation, neurological effects, melanosis) no longer cause great concern. If problems do appear, they are easily resolved by reducing the dosage and/or utilizing additional medication. (Author abstract modified)

002604 Schier, E. Klinik Kinderneuropsychiatrie, Ber. Med., Universitat, Leipzig, German Democratic Republic / **Psychopharmaceutical therapy to calm drive, activity, and restlessness in childhood./** Psychopharmakotherapie zur Dampfung von Antrieb, Aktivitat und Unruhe im Kindesalter. Padiatrie und Grenzgebiete. 18:31-41, 1979.

The use and misuse of psychopharmaceuticals administered for children's hyperactivity is discussed. School physicians, pediatricians, and child psychiatrists are increasingly confronted with this problem. Treating childhood hyperactivity with psychopharmaceuticals can be recommended only after symptoms are sufficiently diagnosed on a psychiatric level. Treatment should be carried out within a phenomenological/nosological framework. Administered in this manner, psychopharmaceuticals can be a valuable therapeutic tool. (Journal abstract modified)

002605 Shepherd, Michael. Institute of Psychiatry, De Crespigny Park, Denmark Hill, London, SE5 8AF, England **Classification and psychotropic drugs.** Progress in Neuro-Psychopharmacology. 4(4/5):447-454, 1980.

Attempts to classify psychotropic drugs in terms of their biological actions are reviewed and demonstrated to be unsatisfactory. Correct clinical models of classification are described and their deficiencies discussed. The need for multiple approaches to classification in psychopharmacology is emphasized, and the development of a heuristic rather than a global taxonomy is recommended. Five types of classification systems are described: scientific inquiry; clinical practice; didactic teaching; public communication; the reporitng of adverse reactions. 40 references. (Author abstract modified)

002606 Siddall, James W.; Keogh, Nancy J. Behavioral Consultants, 4322 S. Cleveland-Massillon Rd., Norton, OH 44203 **Psychotherapeutic drug recommendations based on the Mini-Mult.** Psychological Reports. 47(3, Part 2):1283-1288, 1980.

Psychotherapeutic drug recommendations based on Mini-Mult (a 71-item interview form of the MMPI) profile signs were compared with prescriptions written by psychiatrists for 32 male and 40 female clients at a community mental health center. There was an overall 86% agreement across major drug groups and a similar correspondence for specific categories of drugs including antipsychotic, antidepressant, antianxiety, and a no-medication group. These results suggest that the Mini-Mult can be used as a screening device to identify those clients in need of a formal evaluation for medication. The potential applicability and cost effectiveness of this method are discussed. 28 references. (Author abstract)

002607 Silverstone, Trevor. Academic Unit of Human Psychopharmacology, German Hospital, Ritson Road, London, E.8., England **Psychopharmacology of anorectic drugs in man.** Progress in Neuro-Psychopharmacology. 4(4/5):371-374, 1980.

A series of studies designed to investigate whether observations made on the actions of anorectic drugs in experimental animals have their parallels in man is described. Using techniques to quantify changes in hunger and food intake in human Ss, it was shown that the centrally acting anorectic drugs d-amphetamine (d-Amp) and fenfluramine (FF) reduce visual analogue scale (VAS) ratings of hunger in a dose-related manner. Further, the effects of such drugs on hunger closely correspond to their effects on food intake. With regard to possible underlying neurochemical mechanisms, the effect of pimozide (PMZ), a relatively specific dopamine (DA) receptor blocking compound, on d-Amp-induced anorexia and arousal was examined. PMZ (2mg) caused no reduction of the anorexia induced by 10mg d-Amp whereas it did attenuate its stimulant action. Thus, DA mechanisms may be less important in d-Amp anorexia than in d-Amp arousal, a view which is consistent with some animal data. 20 references. (Author abstract modified)

002608 Simeon, Jovan. Dept. of Psychiatry, University of Ottawa, Royal Ottawa Hospital, 1145 Carling Ave., Ottawa, Ontario K1Z 7K4, Canada **Biology and therapy of violent behaviour in children.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1223-1228).

The need to study the development and manifestations of violent behavior in children in order to understand its occurrence in adults is discussed, along with the importance of distinguishing between different types of aggression, violence, antisocial

behavior, and impulsivity. In children and adolescents, biological findings associated with violence have resulted from clinical genetic, neurophysiological, and psychopharmacological studies. A complex interaction between biological and nonbiological factors has been found, and most children with violent behavior have a disability persisting into adolescence and adulthood. Long-term results in therapy have been discouraging, and for ethical, medical and legal reasons, research in biological therapies of aggression in children has been severely limited. Psychotropic drugs are widely used, but their mechanism of action is largely unknown and indications are vague. Drugs can also alter the manifestations of aggression through actions such as impulsivity, vigilance, mood, thoughts, and activity level. 55 references. (Author abstract modified)

002609 Simon, Eric J. New York University Medical Center, New York, NY 10016 **In vitro studies of opiate receptors.** Advances in Biochemical Psychopharmacology. 20:31-51, 1979.

Evidence from in vitro studies is used to describe the properties, regional distribution, and ontogeny of opiate receptors. Conformational changes in opiate receptors and the role of lipids in opiate receptor binding are also discussed. Progress in solubilization and purification of opiate receptors, opiate receptor studies in organotypic tissue culture, environmental effects on opiate receptors, multiple types of opiate receptors, and the isolation of endogenous opioid peptides are also reviewed. 78 references.

002610 Simon, Pierre. Dept. de Pharmacologie Clinique, Groupe Hospitalier Pitie-Salpetriere, 47, bd. de l'Hopital, F-75634 Paris Cedex 13, France **/Reflections on the classification of antidepressant drugs./** Reflexions sur la classification des antidepresseurs. Progress in Neuoro-Psychopharmacology. 4(4/5):503-505, 1980.

The problem of classifying new antidepressant drugs is discussed. Various substances with presumed antidepressant action have appeared recently: maprotiline, viloxazine, mianserin, nomifensine, 5-hydroxytryptophan, amineptine, and salbutamol, among others. Several possibilities for classifying these atypical antidepressants are envisaged, including chemical, pharmacological, biochemical and clinical.

002611 Singh, Man Mohan; Lal, Harbans. Schizophrenia Program, V.A. Hospital, Memphis, TN **Dysfunctions of cholinergic processes in schizophrenia.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (P. 434-438).

Evidence for dysfunctions of cholinergic processes in schizophrenia and findings on the effects of centrally active anticholinergics on the action of neuroleptics are reviewed. The latter effects include suppression of pharmacologically-induced stereotypies, brain self-stimulation, and avoidance behavior. Habituation, an important adaptive process for discontinuing unrewarded biologically insignificant behaviors, is also adversely affected by anticholinergics. Schizophrenics are not only prone to stereotyped repetitiousness but tend to habituate poorly and have neophobia. It has also been shown that anticholinergic drugs antagonize the specific antipsychotic effects of neuroleptics in schizophrenics. This suggests that central cholinergic processes are involved in the pathogenesis of the psychosis, and that these mechanisms may act in opposition to the facilitatory catecholaminergic pathways in the midbrain limbic organization to facilitate adaptive suppressive functions, such as habituation. (Author abstract modified)

002612 Skoda, C. VUPs, Ustavni 91, 180 00 Praha 8 - Bohnice, Czechoslovakia **/Social psychiatry and psychopharmacology./** Socialni psychiatrie a psychofarmakologie. Ceskoslovenska Psychiatrie. 76(2):85-88, 1980.

The relationship between social psychiatry and psychopharmacology is discussed. Social psychiatry is defined as that part of the psychiatric sciences whose application is oriented to social factors affecting psychopathology and to the social consequences and social interactions of psychopathology. Psychiatry today has various effective sociotherapeutic means for tertiary prevention: mental hygiene in hospital facilities, secondary prevention, and social and occupational rehabilitation.

002613 Snyder, Solomon H.; Childers, Steven R.; Creese, Ian. Dept. of Pharmacology and Experimental Therapeutics, Johns Hopkins University School of Medicine, Baltimore, MD 21205 **Molecular actions of opiates: historical overview and new findings on opiate receptor interactions with enkephalins and guanyl nucleotides.** Advances in Biochemical Psychopharmacology. 20:543-552, 1979.

The history of research on opioid peptides is briefly reviewed. The identification of the opiate receptor, the chemical identification of endogenous opioid peptides, and the demonstration of heterogeneous enkephalin binding sites are discussed. Current research on the role of guanyl nucleotides in maintaining opiate receptor sensitivity is considered. 15 references.

002614 Soldatos, C. R. Sleep Research and Treatment Center, Pennsylvania State University Faculty of Medicine, Hershey, PA **Computerized sleep EEG (CSEEG) in psychiatry and psychopharmacology.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1289-1294).

The effectiveness of combined use of computerized sleep EEG (CSEEG) and sleep research findings in quantifying objectively measurable parameters in psychiatry and psychopharmacology is discussed. CSEEG systems can cover a broad range of technical approaches from a specific pattern recognition to sleep stage classification. Highly sophisticated data processing, analysis, and graphic display can readily be available to the clinician. Such techniques may contribute to evaluation of etiological factors, syndrome identification, prognosis, and treatment outcome. The application of CSEEG in psychopharmacology in general, and particularly in hypnotic drug investigations, exemplifies its usefulness. 24 references. (Author Abstract Modified)

002615 Spriet, Alain. Laboratoire Hoechst, Tour Roussel Nobel Cedex 3, F-92080 Paris La Defense, France **/Prediction and prognostic factors in clinical trials of psychotropic drugs./** Prediction et facteurs pronostiques dans l'etude clinique des psychotropes. Psychologie Medicale. 12(C):23-31, 1980.

Through the use of clinical trials an attempt is made to determine which individuals will and will not respond to psychotropic drugs. Characteristics of the patient's symptom profile, personality, social environment, personal history, therapy and treatment are examined. Although more research needs to be done in many of these areas, certain characteristics, such as extraversion, indicate a good response. It is emphasized that various data must be collected and analyzed as a whole to determine if a given individual will respond. 25 references. (Journal abstract modified)

002616 Stika, L.; Vinar, O. Pod Marjankou 83, Dept. of Neurology, Policlinic, OUNZ Prague 6, 160 55 Prague 6, Czechoslovakia **Utilization of psychotropic drugs. An international comparison.** Activitas Nervosa Superior. 22(3):221-224, 1980.

An international comparison of the utilization of psychotropic drugs is presented. Data concerning use of neuroleptics, anxioly-

tics, hypnotics, and antidepressants are presented for Czechoslovakia, the German Democratic Republic, Finland, Iceland, Northern Ireland, Norway, and Sweden. With the exception of hypnotics, the utilization of psychotropic drugs in Czechoslovakia and the German Democratic Republic is much lower than in Scandinavia. The data do not indicate that psychotropic drugs are overused. National patterns in drug use and prescription practices are discussed. 9 references.

002617 Sulser, Fridolin. Dept. of Pharmacology, Vanderbilt University School of Medicine, Nashville, TN 37232 **New perspectives on the mode of action of antidepressant drugs.** Trends in Pharmacological Sciences. December:92-94, 1979.

Alternative perspectives on the mode of action of antidepressant drugs are reviewed in relation to the classical catecholamine and/or indolealkylamine hypotheses of affective disorders. It is noted that the classical hypotheses are based on studies of the acute pharmacological effects of antidepressant drugs, and generally cannot account for the discrepancy between acute biochemical and pharmacological effects and the time course of clinical therapeutic action. Topics discussed include: the shift in research emphasis from acute pharmacological effects in delayed postsynaptic modification of adrenergic receptor function; the molecular basis of noradrenergic subsensitivity elicited by antidepressant treatments; and the neurobiological significance of alterations in sensitivity of the norepinephrine receptor coupled adenylate cyclase system in brain elicited by antidepressant drugs. 18 references.

002618 Summerlin, Julia. University of Alabama Medical Center, Birmingham, AL 35233 **Nursing aspects of psychopharmacology.** Alabama Journal of Medical Sciences. 17(2):170-172, 1980.

Nursing aspects of psychopharmacology are briefly discussed with emphasis on the responsibility to the nurse as a source of knowledge and as an advocate of the psychiatric client. Nurses should especially be aware of the properties and side-effects of commonly used compounds, such as the tricyclic antidepressants used in treating depression, and of the psychopharmacological needs of the elderly and women in childbearing age. They should also be aware that psychiatric nursing extends beyond the physical needs of the clients and involves noncompliance and control issues related to power struggles and dependency needs. The psychiatric nurse is in the position to perform skilled observation and evaluation, provide client and family education, and serve as a client advocate in the use of psychoactive drugs. 5 references.

002619 Sutter, J.; Dufour, H. Clinique Universitaire de Psychiatrie, C.H.U. Timone, F-13005 Marseille, France **/Predictive criteria for lithium salts activity./** Les criteres predictifs de l'activite des sels de lithium. In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 1117-1122).

The prophylactic use of lithium in psychiatry is discussed. In orthodox indications the eventualities of lithium resistance persist, particularly when there is a low ratio of lithium and there are electrolytic variations. These particularities are correlated with globular and cellular membrane penetration of the drug. Activity factors can be found in thymic disturbances, types of pathological organization and the notion of a family related mental pathology. Certain genetic markers are evident with regard to lithium resistance. 25 references. (Author abstract modified)

002620 Terenius, L. Dept. of Pharmacology, University of Uppsala, Uppsala, Sweden **Opiate receptors: problems of definition and characterization.** Advances in Biochemical Psychopharmacology. 21:321-328, 1980.

Problems of definition and characterization of opiate receptors are discussed. It is noted that actions have been considered specific or nonspecific on the basis of their sensitivity or resistance to naloxone, and that this usage is unfortunate. Receptor binding analysis is considered to have great potential in identifying the site of action of a particular drug and in structure activity studies. However, since no functional response is measured, an intrinsic difficulty to overcome is in establishing the functional significance of drug binding data. Methods are described for the analysis of ligand selectivity between several sites and their relative regional distribution. 11 references.

002621 Tholose, A. no address **/Initial prescription of psychotropic medications for adolescents in a medical/professional institute, and the role of the psychiatrist in a medical/professional institute./** Prescription initiale de medicaments psychotropes chez des adolescents d'un institut medico-professionnel, role du medecin psychiatre dans un I.M.P.R.O. Annales Medico-Psychologiques. 138(2):241-245, 1980.

Three cases of initial prescription of psychotropic drugs to adolescents are discussed. The objectives of the prescription are to stabilize the mental and behavioral condition, and to improve the development and use of affective and intellectual capacities so that the subject can acquire maximum independence. The three cases presented demonstrate intellectual handicap with or without character and behavioral disturbances. They also indicate the wide range of problems which the psychiatrist experiences when prescribing psychotropic drugs initially to adolescent psychiatric inpatients: weighty responsibility, potential conflict with the hospital team, the need for constant patient monitoring, and the need for caution in later prescriptions. A discussion follows the main text.

002622 Valzelli, L. Istituto di Ricerche Farmacologiche Mario Negri, Milano, Italy **Considerations on psychoactive drugs.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 873-875).

The class of neocortical nootropic drugs initiated by piracetam is discussed, and the implications of their effects for developments in the field of clinical pharmacotherapy or for improving human mental performance are examined. The relevance of various psychoactive drugs in different clinical situations is reviewed. At the present time, piracetam is the only available compound which can cope effectively with the theoretical and clinical concept of nootropic drugs; in addition, it has no appreciable side-effects. Localization of drug effects in one or more of the anatomical/functional systems of the brain is discussed. 18 references. (Author abstract modified)

002623 Vartanian, F. E. Division of Mental Health, World Health Organization, Geneva, Switzerland **Problems of drug treatment of mental disorders.** Advances in Biochemical Psychopharmacology. 24:603-607, 1980.

Results of a study commissioned by the World Health Organization (WHO) to elucidate the patterns of psychotropic drugs use in different geographical areas of the world (emphasizing drug use in devleoping nations) are presented, and issues in the cost effective drug treatment of mental disorders are discussed. It is recommended that a minimal list of drugs for the management of neuropsychiatric disorders be composed for particular countries, based upon the specific health situation in that country. Survey results indicate tht psychotropic drug use is similar in the developing and developed countries. The large variation in therapeutic effects and side-effects of given drugs among developing and developed countries is emphasized. 3 references.

002624 Venn, R. D. Sandoz Pharmaceuticals, East Hanover, NJ 07936 **Review of clinical studies with ergots in gerontology.** Advances in Biochemical Psychopharmacology. 23:363-377, 1980.

A review of clinical studies of the use of dihydroergotoxine in patients with senile dementia indicate the drug is safe and efficacious. Symptomatic improvement is usually not observed until 3 to 6 weeks after treatment is initiated. Patients treated in the early stages of senile dementia generally show greater response to the drug than those treated in later stages. 67 references.

002625 Viala, A.; Cano, J. P.; Durand, A. Lab. de Toxicologie generale et Biotoxicologie, Faculte de Pharmacie, 27, boulevard Jean-Moulin, F-13385 Marseille Cedex 4, France **/Study of metabolism and blood levels of antidepressants: towards a rationalization of their therapeutic use./** Etude du metabolisme et des taux sanguins des antidepresseurs: vers une rationalisation de leur emploi en therapeutique. Encephale. 6(4):315-332, 1980.

The relationships between metabolism and blood levels of antidepressants and their therapeutic use are discussed. Indications for bioavailability, metabolism, and half-life of these compounds are presented and the importance of individual variations is noted. The relationship between clinical response and steady-state plasma levels is linear for imipramine, amitriptyline, clomipramine, doxepine, dibenzepine, and curvilinear for nortriptyline, desipramine, protriptyline, maprotiline, and mianserin, especially in endogenous depression. Prediction of steady-state plasma concentrations is now possible. The question of side-effects and drug interactions is considered. 98 references. (Journal abstract modified)

002626 Vinar, O. K ovcinu 1519, 182 00 Prague 8-Kobylisy, Czechoslovakia **/Neuroleptics in 1978./** Neuroleptika v roce 1978. Ceskoslovenska Psychiatrie. 76(4):276-284, 1980.

Clinical testing of neuroleptic drugs in 1978 is discussed. Verification of hypotheses concerning the mechanism of their effect seen mainly in the blocking of dopaminergic receptors, was central to this clinical pharmacological testing. The related question of the incidence of chronic (tardive) dyskinesia in long-term treatment and the role of balance between dopaminergic, cholinergic, and GABAergic innervations in their development and therapy had great practical importance, with apomorphine playing a particularly significant role. Problems of long-term maintenance treatment and testing of the advantages of peroral (pimozide, penfluridol) and parenteral (fluphenazine decanoate and flupentixol decanoate) preparations were also in the foreground of the research. It is concluded that the importance of clinical testing of newly synthesized substances with a neuroleptic effect has been somewhat eclipsed by experiments designed to determine the role of the endorphin transmitter system in the pathogenesis and therapy of schizophrenias. 59 references. (Journal abstract modified)

002627 Way, E. Leong. Dept. of Pharmacology, University of California, San Francisco, CA 94143 **Review and overview of four decades of opiate research.** Advances in Biochemical Psychopharmacology. 20:3-27, 1979.

Progress in opiate research since 1940 is described. Early milestones included the development of the narcotic antagonist nalorphine and synthetic morphine surrogates such as meperidine. In the 1950s and 1960s, improved methodology permitted greater understanding of the biologic disposition of opiates, structure/activity relationships, mechanisms of tolerance and physical dependence, and sites of action for morphine-like drugs. More recently, endogenous opioid peptides have been discovered in several species, and the opiate receptor has been characterized in vivo and in vitro in several preparations. Current research focuses on the mechanisms of enkephalin and endorphin activity, including those related to ion flux and lipid metabolism. 26 references.

002628 Wehr, T. A.; Wirz-Justice, A.; Lewy, A. J.; Goodwin, F. K. NIMH, Bethesda, MD 20205 **Biological rhythm disturbances in affective illness.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 303-306).

Findings of circadian rhythm disturbances in patients who rapidly cycle on tricyclics, results of clinical experiments in which direct intervention in the timing of circadian rhythms in one of these patients altered her clinical state, and animal experiments which indicate a direct effect of tricyclic antidepressants on the timekeeping function of a central biological clock which drives circadian activity rhythms are reviewed. Results of these studies support the hypothesis that alterations in timing or phase of a central biological clock play a central role in the pathophysiology of some forms of manic-depressive illness, and that thymoleptic drugs may act through their frequency modulating effect on its intrinsic rhythm. 19 references.

002629 Weitzel, William D.; Shraberg, David; Work, Jack. Suite 302, 135 East Maxwell St., Lexington, KY 40508 **Inappropriate ADH secretion: the role of drug re-challenge.** Psychosomatics. 21(9):771, 775, 779, 1980.

A case history of a 54-year-old woman with an episode of the syndrome of inappropriate antidiuretic hormone secretion (SIADH) is presented. The case demonstrates the complex interrelationships between mental illness, emotional and physical stress states, and commonly used drugs in the psychiatric setting. The woman was admitted to the hospital for withdrawal from benzodiazepines. She was successfully withdrawn from the benzodiazepines by substituting diazepam and gradually decreasing the dosage over 8 days. On the 14th day, the women was suffering from volume depletion secondary to vomiting and free-water replacement. On day 44 it was concluded that she had SIADH secondary to desipramine hydrochloride. Her physicians decided to rechallenge her with desipramine and monitor daily serum electrolytes and serum and urine osmolalities. The woman adjusted to this dosage and experienced an improvement in mood. The use of a drug rechallenge to confirm the apparent role of a tricyclic in inducing transient SIADH was successful. The syndrome of inappropriate ADH secretion in a psychiatric setting may be transient and the role of psychotropic agents should be carefully evaluated before final diagnosis and treatment goals are established. 10 references.

002630 Yaryura-Tobias, J. A. Division of Research, North Nassau Mental Health Center, Manhasset, NY 11030 **Anatomobiochemical mapping of the brain: neuropsychiatric correlations.** In: Obiols, J., Biological psychiatry today. Vol. A. Amsterdam, Elsevier/North Holland, 1979. 817 p. (p. 466-469).

In a holistic approach to the etiophysiopathology of schizophrenia, the pharmacological, biological, and neurological considerations are discussed and the important role of brain mapping is emphasized. An overview of the following topics is presented: the biochemical theories of schizophrenia concerning the pharmacological actions of substances on neurotransmitters; psychomotor integration in mental illness; future applicability of brain mapping in the realm of psychiatry; the hypothesis that somatic changes in schizophrenia and those induced by psychotropic drugs are similar; the role of cerebral metabolic parameters and nutrition in brain pathology; and the separation between psychiatry and neurology. It is suggested that through brain mapping, a connection between the physical symptoms of schizophrenia and the relative concentrations and specific loca-

tions (at main anatomical sites) of neurotransmitters may be found. In combining the investigation of the neurology and etiophysiopathology of schizophrenia, it is hoped that a better understanding of the disease will be accomplished, and treatment of the patient will be of a holistic nature. 7 references.

002631 Zarifian, E. Service Hospitalo, Universitaire de Sante Mentale et de Therapeutique, Hopital Sainte-Anne-1, rue Cabanis, F-75674 Paris Cedex 14, France **Limits, value and perspectives of the psychiatric diagnosis in clinical psychopharmacology.** In: Obiols, J., Biological psychiatry today. Vol. B. Amsterdam, Elsevier/North Holland, 1979. 835 p. (p. 892-896).

Limitations of the psychiatric diagnosis in clinical psychopharmacology, the difficulties of a drug trial based only on a diagnosis, and the impossibility of making correlations between biological changes and psychiatric diagnosis are discussed. It is contended that the diagnosis is most often based on summarization of symptoms which are collected by different rating scales. If the items of the scale are modified after a period of time, the modifications are attributed to the drug. This static vision does not consider three points: intercultural, interindividual, and intraindividual differences which can deeply affect the evaluation of the diagnosis. Since the possible interference of psychological factors is also often overlooked, the interpretation of the therapeutic effects is often questionable. A new approach based on analysis of symptoms, rather than diagnosis, is proposed; meanwhile, if diagnoses in clinical psychopharmacology are inadequate, a universal formulation of the description, quantification, and evolution of symptoms will be difficult. 10 references. (Author abstract modified)

002632 Zigmond, Michael J.; Heffner, Thomas G.; Stricker, Edward M. Dept. of Biological Sciences, University of Pittsburgh, Pittsburgh, PA 15260 **The effect of altered dopaminergic activity on food intake in the rat: evidence for an optimal level of dopaminergic activity for behavior.** Progress in Neuro-Psychopharmacology. 4(4/5):351-362, 1980.

The effects of altered dopaminergic activity on food intake in the rat are reviewed. Food intake is reduced by the acute administration of d-amphetamine. This is mimicked by other dopamine (DA) agonists and blocked by DA antagonists. In higher doses, DA antagonists themselves reduce food intake, as do large lesions of the central dopaminergic projections. While the reduction of food intake produced by DA agonists is accompanied by a general behavioral activation, that produced by DA antagonists and by DA depleting lesions concides with a decrease in behavioral arousal. These findings suggest that there is an optimal level of dopaminergic activity (and of behavioral arousal) for the mediation of feeding and that both increases and decreases from this optimum may disrupt feeding as well as other behaviors. 39 references. (Author abstract modified)

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